

THE RADIO ENTHUSIAST'S JOURNAL FOR SPECIALIZED COMMUNICATION
and the OFFICIAL PUBLICATION OF THE UNITED STATES ATV SOCIETY

THE SPEC-COM JOURNAL™

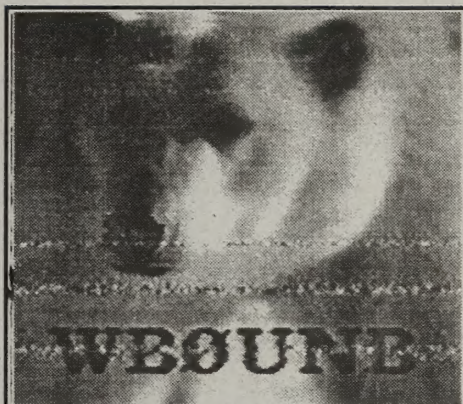
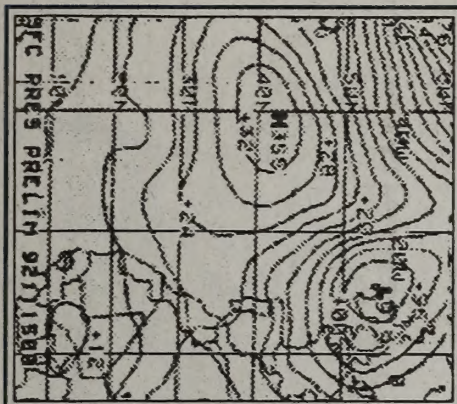
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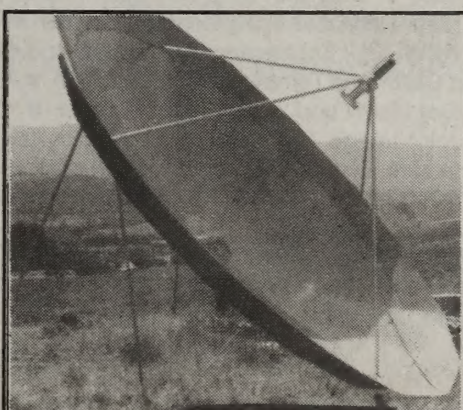
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We want and encourage articles from each of you. This journal needs your how-to's, applications and experiences. The Spec-Com Journal (SCj) covers all specialized communication modes.

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FROM JAW'S JAWS

EDITORIAL COMMENT BY MIKE DONOVAN KA0JAW

What is The SCj?

What is The Spec-Com Journal? What topics are covered? What do you stand for? What not? These are the questions we frequently receive from those just learning of our publication. I will try to summarize the answers to these questions for you.

The Spec-Com Journal is different!

The Spec-Com Journal is a publication that is mailed to subscribers in the United States and 17 foreign countries. The SCj is also available through newsstand distribution in many of the better radio / electronics stores. Our information is published in a true journal format; by that I mean we are a collection of stories, articles, news items, product reviews, activity reports and information submitted by both our regular contributing authors and our readers.

The information presented in our pages is from the people involved in the activity, hobby, mode or product. Sharing of information is what we are all about.

The Spec-Com Journal is different!

The Spec-Com Journal is for you.

This grass roots type of publication is FOR the readers and BY the readers. Because of our format, the type of information and topic matter will change from issue to issue depending on submissions.

The Staff of The Spec-Com Journal shares as much information as possible in the other media we are involved with. We publish much of our information in the electronic media through computer bulletin boards, on-line services like GENie, and in the broadcast media through satellite and radio.

Our goal is to share information in a positive, helpful manner with our readers. To provide a blend of information and advertising so we keep you informed and to provide you with the many view points of our growing number of contributing authors and reader submissions so as not to bore you with a limited or personal prospective.

We believe there are many positive aspects of our hobby and do not search out the negative to be filling our pages or shock our readers. That is not to say that we do not report on all aspects, but that we attempt to provide the positive for you.

The Spec-Com Journal is for you. Let me and the authors know what you want to see in the pages and we will do our best to include it. Our authors, readers, and advertisers are what makes us different from all the rest. We focus on all specialized modes of communication, radio, and television. We tend not to spend much time on rag chewing, contests or nets but to concentrate on specific topics of specialized communications like scanning, short wave, digital, fast scan television, wefax, slow scan television, nostalgia, QRP, public service, computer applications, tvro, satellite and more. As I mentioned before, the blend of our content may change from issue to issue based on the 'hot' issues and the contributions of our readers and authors.

We believe that each of us has a niche that we enjoy but that most of us like to stay in touch with all the specialized modes, the activity and the news.

The Spec-Com Journal is a forum that is dedicated to the information you want to read. We welcome-- no, we **DEPEND** upon submissions from readers, industry leaders, and our fine authors to keep you informed, educated, and involved. These are the people who are active, knowledgeable, and part of the mode they share information about. We also welcome the reader who is new, with fresh ideas to discuss.

What we stand for is the exchange of information, the sharing of ideas in a grass roots type journal on a regular basis.

We are the official publication of The United States Amateur Television Society, a group dedicated to the promotion of slow and fast scan television through information exchange and special events.

We are the official publication of The USATVS

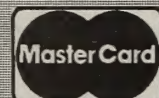
What we stand for is a positive promotion of the modes we enjoy. Our only industry business is publishing The Spec-Com Journal and offering you additional information by selling related books or sharing on-line information.

We are not motivated by a political addenda. We do not have products that we are promoting.

What we do need is your help to spread the word about The Spec-Com Journal. **We need you** to help us grow and share information with more people each day. Let others know about our journal. We need your input and submissions to continue the sharing of ideas.



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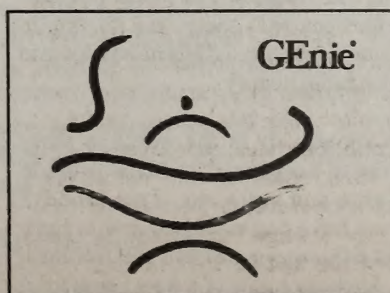
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NOW THE NEWS

In Specialized Communications

The news for the HAM, Scanning, SWL community. If you know of news items that relate to any of the topics covered in The Spec-Com Journal please mail, fax (319) 583-6462, E-mail via internet to spec-com@genie.geis.com. Spec-Com is also on line with GENIE and The Tri-State Data Exchange (see information in this issue for more details on sending us on-line comments). Share the news with all of us here at The Spec-Com Journal.

Instant Ham License?

The FCC has proposed an instant ham radio license for new hams: a form of temporary operating authority to unlicensed persons who pass the examination for a new amateur operator license. The new system would work this way: the temporary operating authority would begin when the exam is passed and an application for a license is filed, and last until a full-term license is received from the FCC, but not more than 120 days.

LTRN falling from the sky

The popular tvro radio programming known as Let's Talk Radio Network that has been heard for over 18 months on Spacenet3, channel 21 wideband 5.8 audio is coming to an end. The Spec-Com Journal has been a proud sponsor of the network. We have received this Press Release in addition to a phone call from Blair Alper who is the President / Owner of this free spirited tvro and ham related network. We are truly sorry to see the network come to an end and wish Blair and all the hosts of the programming the best in whatever they do or wherever they land after falling from the sky. The Spec-Com Journal will

continue to watch this development and keep you posted as to the formation of any new network from this group. The Spec-Com Journal will continue to support the programming found on this network and participate in the ways we can. Now, here is the final press release from LTRN as we know it today.

(editors note - December 1, 1993) This was the last week of operation for the Let's Talk Radio Network (LTRN). LTRN has operated on Spacenet 3, Channel 21, 5.8 Mhz wide band audio for the past 18 months. Our operation has consisted of technical and entertainment oriented programming aimed at the TVRO enthusiast and Amateur Radio Operator.

LTRN had been informed by the PASS Sports Service that we would have to vacate the 5.8 Mhz subcarrier effective on or soon after the end of November. PASS intends to use the 5.8 Mhz carrier for affiliate cue tones in accordance with their becoming a 24 hour service. We had been in the process of negotiating for a new carrier and hoped for a seamless transition. The proposed new carrier had wanted us to sign a 5 year contract under which we would be responsible for the lease fee for the full term whether or not the service survived. The carrier was willing to sign a 1 year agreement, however, they insisted on a substantially higher rate. This coupled with the recent demise of one of our sponsors, VHF Communications, made the likelihood of continuing the service less and less likely.

On Tuesday night we were informed that William Cooper's "The Hour of the Time" was pulling out. The host of the "Full Disclosure" program was informed that LTRN was moving and elected to pull out as well. The decision was made Wednesday afternoon that there was no way to continue the service. LTRN now fades into satellite radio history.

Plans are already in the works in other quarters to keep direct to home satellite radio alive and in the sky. I am proud of what we have accomplished and to have provided this service to the TVRO community. Anybody know of a new home for a

homemade microprocessor based satellite uplink controller? (editors note - I understand our friend the controller has found a new home)

2 GHZ Services

It seems the FCC has started to allocate

It's FREE

Hamtronics, Inc. has a 40 page catalog of vhf and uhf modules for amateur radio, two way shops, scientific and industrial radio users, and OEMs.

The catalog features many products of interest to readers including transmitters and receiving converters for atv and weather satellite receivers and preamps for 137 MHz.

These products are among the popular selection of vhf and uhf fm transmitters, receivers, power amplifiers, converters, and preamps, repeaters, dtmf controllers, autopatches, and digital radio modems which Hamtronics has manufactured for over 30 years.

To get your FREE copy of this handy catalog, write to them at Hamtronics, Inc.: 65-S Moul Road; Hilton NY 14468-9535. Or Phone 716-392-9430 or fax 716-392-9420.

Let them know you saw this information in The Spec-Com Journal.

Manufacturers or distributors who wish to have their products or services reviewed by The Spec-Com Journal should send their product samples and promotional materials to us. News releases and club/group announcements are welcome. Let others know what you are doing.

some of the spectrum at 2 GHz for use for voice, data and video communications. Personal Communication Service will be assigned to a portion of the spectrum in new subbands from 1855 to 2200 MHz.

Product Announcements

Advanced Electronic Applications, Inc. of Lynnwood, WA has announced several new products to its lineup. For more information contact AEA at (206) 774-5554.

HamLink controls your ham station using a touch tone telephone. Change bands and frequency, tune up or down, switch modes, scan, run split VFO, or virtually any other radio feature from anywhere you can find a touch tone phone. RadioLink is similar to HamLink; RadioLink lets you use the touch tone keypad on your handheld or mobile radio to change bands, frequency, or mode. RadioLink can go between your HF/VHF/UHF transceiver and a repeater or a 220 MHz or UHF full duplex link. A demonstration unit has been set up for people who would like to call and try it out. Please call (800) 432-8873 and request a brochure with the telephone number and a listing of the commands (let them know you read about it in The SCJ).

AEA FAX II is a stand alone, multi intensity gray scale HF weather fax demodulator and display software package. This IBM compatible software receives and displays satellite maps and WEFAX images in 16 levels of gray. In addition to gray scale images, AEA FAX II also receives and decodes CW, RTTY, and NAVTEX Transmissions.

AEA announces the recent introduction of PC Pakratt for Windows - the first and only data controller program for Microsoft Windows on the market today. PC Pakratt for Windows is a full featured Windows application for controlling the entire AEA family of data controllers. Support for Windows functions make PC Pakratt for Windows extremely simple to operate.

Direct Satellite / listeners

In a press release from the Public Information Office Jet Propulsion Laboratory California Institute of Technology National Aeronautics and Space Administration Pasadena, Calif (818) 354-5011 (what a mouthful) we learn that direct digital radio broadcasting via satellite was demonstrated at a recent conference.

New technology that would allow radio broadcasters to transmit to listeners directly from earth orbiting satellites has been demonstrated by researchers from NASA's Jet Propulsion Laboratory.

JPL engineers demonstrated direct digital radio broadcasting of compact disk quality audio via satellite at a recent telecommunications conference in Buenos Aires, Argentina.

Under sponsorship of the Voice of America, the U.S. government's international broadcasting agency, JPL is developing a satellite radio receiver that will be turned over to industry for commercial development.

Fields that could benefit from direct satellite radio broadcast include international broadcasting, which currently uses short-wave radio bands at much lower sound quality, as well as broadcasting to remote areas not served by local stations.

"It will soon be possible to transmit high quality audio via satellite to receivers no larger than today's car radios," said Arvydas Vaisnys, task manager of the JPL effort.

In the Argentina demonstration, JPL researchers used a NASA Tracking and Data Relay Satellite (TDRS) to beam down a compact disc radio channel in the S band portion of the microwave spectrum to a digital receiver with an 8 centimeter (3 inch) circular antenna.

Traditionally, receiving signals from satellites has relied on the use of much larger parabolic dish antennas.

"This frequency is close to the U.S. allocation of 2310 to 2360 MHz for satellite sound broadcasting, and is 600 MHz above the L band allocation accepted by other countries in the western hemisphere," said Vaisnys.

WEFAX, ATV, VHF/UHF

SPECTRUM INTERNATIONAL, INC. offers quality components for today's active specialized communication operator. SPECTRUM INTERNATIONAL, INC. has products for VHF/UHF and above, ATV, FM, SSB, OSCAR and WEFAX. For more information contact them at Post Office Box 1084SC; Concord, Massachusetts 01742.

CQ's Named Finalist

Ham Radio Horizons, CQ's video introduc-

tion to amateur radio, has been named a finalist in the New York Festivals International Non-Broadcast Media Completion for 1993. The New York Festivals has been honoring outstanding achievements in non-broadcast media since 1957. Ham Radio Horizons was one of nearly 1,400 programs entered in the completion non-broadcast categories. Winners of the festivals' Gold, Silver and Bronze medals were announced at an awards banquet in January 1994.

Ham Radio Horizons is produced by CQ Communications, Inc. of Hicksville, NY, publishers of CQ Amateur Radio magazine, Communications Quarterly, Popular Communications and other periodicals, books and videos relating to radio communications hobbies.

Nobel Prize Winner

From our ARRL mail we learn the winner of the 1993 Nobel Prize for physics, Princeton University's Dr. Joseph H. Taylor, attributes his success in science to his early involvement in amateur radio, according to published news accounts.

Taylor K1JT, who shared this year's award with his former student and current Princeton colleague, Dr. Russell A. Hulse, told reporters that he developed his scientific skills as an Amateur Radio enthusiast, while a student at Moorestown Friends Academy in New Jersey.

"The half a million hams in the U.S. are cheering for Dr. Taylor today," said Steve Mansfield, public information manager of the American Radio Relay League, the nation's largest group of Amateur Radio operators. "Our organization has often said that tomorrow's scientific leaders are very likely to be among today's young hams. Dr. Taylor's success is certainly ample proof."

Missing Mars Observer

The ARRL issued a press release stating: A team of Canadian and American Amateur Radio enthusiasts joined the Jet Propulsion Laboratory (JPL) in search for the Mars Observer, a planetary probe adrift somewhere in the solar system.

JPL launched the Mars Observer in September 1992. It lost contact with the probe on August 24, 1993.

A small group of Amateur Radio aficionados is among only four groups in the world that are aiding JPL in this mission. Their finding may help JPL determine whether

it should proceed with tentative plans to launch a second spacecraft to the red planet.

JPL programmed the Mars Observer to emit a UHF signal, and the Toronto VHF Society adapted the Algonquin radio telescope to receive the signal. The Amateur Radio enthusiasts used digital signal processing - a special algorithm, or set of mathematical instructions - to try to detect the signal.

Although the Amateur Radio operators weren't able to monitor the Mars Observer this time, they plan to try again in 1994.

Get Started Contesting

"Getting Started in Contesting", a new ham radio how-to video, has been released by CQ communications, Inc., publishers of CQ Amateur Radio and other hobby radio magazines. It is the fifth video in the "Getting Started" series.

The videos are available from many ham dealers or may be ordered directly from CQ by calling, toll-free, 1-800-853-9797. Discounts are available to radio clubs and for volume purchases.

HAMTRONICS CATALOG

Hamtronics, Inc. has a 40 page, free, catalog of vhf and uhf equipment. The catalog features many products of interest to readers including transmitters and receiving converters for atv and weather satellite receivers and preamps for 137 MHz.

To get your free copy of this handy catalog, write Hamtronics, Inc.; 65-S Moul Road; Hilton NY 14468-9535. Let them know you heard about them in The Spec-Com Journal.

SSTV Explorer

Absolute Value Systems of Chelmsford, MA has introduced it's SSTV Explorer for those who want to receive color images. The low cost SSTV Explorer receives all the popular modes with the exception of the ATV modes. It comes with the same easy to use graphical user interface software as the Pasokon TV unit.

WEFAX from TVRO

You can now receive full resolution weather pictures by simply plugging the SWAGURSAT GT into the 'base band video' connector on the back of your satel-

lite television receiver. Then plug the SWAGURSAT GT into your computer decoding device and you are ready to receive pictures. Move your satellite TV dish to Spacenet 3, Transponder 17, and start receiving pictures. While it is legal to receive these signals, the images you generate cannot be used for personal gain or profit. For more information contact SWAGUR Enterprises at Box 620035 Middleton, WI 53562-0035 or call (608) 592-7409 and let them know you read about their exciting product in The Spec-Com Journal.

LAPTOP / NOTEBOOK WEFAX

MultiFAX offers two fully featured weather satellite demodulators: one model plugs directly into the expansion slot of your IBM compatible desktop PC; the other model interfaces to your PC laptop, notebook, or desktop through the parallel port - perfect for crowded computers. For more information contact MultiFAX; 143 Rollin Irish Road; Milton, VT 05468 or call (802) 893-6859.

ATV Equipment

In a nice fax from our freinds, they asked we pass this information on to you. The information is from Frank Koditz Nachrichtentechnik.

"Dear ATV people, Last ham fleamarket in Dortmund, I got an Spec-Com Journal from the chief of our atv club.

We produce ham equipment and commercial parts for satellite receiving. We build transmitters and receivers for ATV. In Germany, we use 70 cm, 23 cm, 13 cm and 3 cm for atv. 9cm is the next band we like to use. We have a lot of atv transponders (relais stations), but the most people make direct contacts with other hams.

Are you interested for our new atv systems? At the moment, we planning a new 70 cm AM vestigial side band transmitter. We make FM Video modulation too.

Our special parts are for 13 cm band. We have a low noise converter with 0.5 dB noise and 50 dB gain. It's into a waterproof case with N connector input and f connector output, so you can use a satellite receiver for receiving.

We have a lot of small circuits: video filter, 70 MHz IF filter, etc. When you think, something of our products are new for the hams, please send us a fax for better info.

Our fax number is: 0049 - 641 - 202629" (If you FAX them for more information make sure you let them know you heard about them from The Spec-Com Journal.)

Resource Directory

David Thompson, K4JRB, owner of Resource Solutions, announces the publication of the 1994 edition of the Amateur Radio Mail Order Catalog and Resource Directory. According to Mr. Thompson "The January 1994 issue marks the fourth edition of the catalog and it's bigger and better than ever, with 250+ pages, nearly 200 categories, and more than 1,600 entries of mail order products and services for hams."

The catalog is categorized and alphabetized into easy-to-find headings. Listings include the name, address, phone and fax number of the vendor, plus a description of products or services.

For more information write David Thompson at 6050 Peachtree Parkway, Suite 340-228, Norcross, GA 30092 or call (404) 448-9836.

Manufacturers or distributors who wish to have their products or services reviewed by The Spec-Com Journal should send their product samples and promotional materials to us. News releases and club/group announcements are welcome. Let others know what you are doing.

Packet Flight

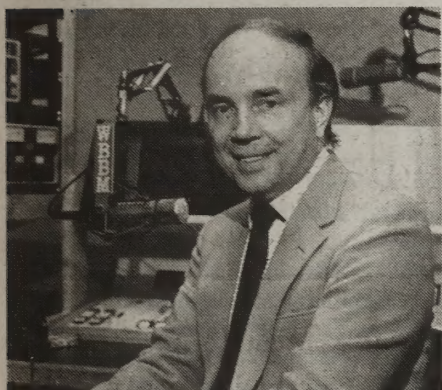
The Central Iowa Technical Society launched a robot packet repeater on December 4. The package worked fine during the flight to 106,000 feet, but quit transmitting after a few bad packets at 15,000.

Since the package quit transmitting 15 minutes before contact with the ground, and never started again, recovery was a bit difficult. So the moral of the story is, protect your equipment against moisture the next time you drop it from over 100,000 feet.

RAIN Focus by Hap Holly / KC9RP

The Dick Helton Story, Part 2

In 1969 a young man from rural Brocton, Illinois found his career in broadcasting catapulted from the minor leagues to the big city. For the



for wire, towers, and things like that. By the time we got done, we had a complete Collins station consisting of a KWM2A HF transceiver, 51S1 receiver, and a 30S1 linear amplifier. We also had a Telrex Christmas Tree for 20, 15, and 10 meters on top of a 200-foot tower. My dad and I played radio in a big way! For me this station was the avenue to DX contests. I became an inveterate DX'er. I'd be out there at 2 or 3 o'clock in the morning. I've got a few awards I'm very proud of hanging on my walls from CQ and the American Radio Relay League (ARRL). My dad enjoyed rag chewing, and developed a terrific number of friends all over the United States that he would go visit, and who would come visit us. Unfortunately, my dad died 7 years later at age 51. But I think those were 7 of the most wonderful years of his life. It meant a great deal to me to have been able to provide those for him.

UNHOLY TEST

"Ham radio is a pretty good way to get in trouble, especially for a kid. When I was a high school senior, a couple of my very good buddies, Ron and Gene, were hams in a little town about 10 miles from us. Ron had a dad who ran the local funeral home next door to their own home. Ron, Gene, and I were the nerds and geeks of our community, playing radio, stringing wire, drawing diagrams and circuits while everyone else was playing basketball and (according to our mothers) doing all sorts of evil things on weekends.

"One Sunday afternoon in the middle of summer, we were at Ron's house, working on his AM (amplitude modulation) transmitter, trying to get just a little more out of the final tubes. Unbeknownst to us, there was a funeral going on next door. I was later told that the preacher had about 100 people in the room. He was saying something like "You know, I'm sure if Harold could be here with us today he'd be saying to us, ... hello, hello test, hello, hello test, hello cq 75, hello!" Apparently the funeral home public address system was a damn good receiver! Needless to say, we never

played ham radio on funeral days after that.

HONEYMOON HAMMING

"In 1971, 2 years after having started at WBBM radio, I married a beautiful young woman who was a flight attendant for American Airlines. She was pretty excited about ham radio too. I thought she was so excited about it that I had no compunction taking my Collins KWM2 along with us on our honeymoon to Australia, New Zealand, and Tahiti. I got ham licenses from all 3 places. In later years, Janice has often told some of her friends that on her honeymoon, she spent more time saying "didah didah" instead of "oowah oowah". That's not true, although I must tell you that DXing from Tahiti is quite a lot of fun.

"Adventures took us later to India, where we tried to get the KWN2 through customs at the New Delhi airport about a week and a half before India went to war with Pakistan. You can imagine the customs inspector's face when he opened up that suitcase and found a big radio inside with sorts of wires and cables. I knew we were in trouble when he said "Well, let me get my supervisor." The supervisor came over, looked, and said "Let me get somebody from the army." We then spent 3 days going through the India bureaucracy trying to get the rig out of quarantine so I could actually use it, which I finally did. I then took it to Khatmandu, Nepal up in the Himalayas, where I have had the pleasure of holding Amateur Radio license number 4. The beautifully typed license showed my callsign as 9NCTY. For those of you who are DX'ers, you know the real prefix is 9N1. I could not convince the man, who was typing out my license at the telecommunications bureau, that it was supposed to be 9N1CTY, not 9NCTY. Apparently that's the way it would look on the back of airplanes. I spent more time explaining the callsign to people I was talking to than actually making contacts, but it was a lot of fun.

ensuing 25 years, Dick Helton / W9CTY has been a fixture in Chicago on WBBM News Radio 78. In 1985 he became the so-called afternoon anchor from 3 to 8 o'clock weekdays, a slot he still fills today. The following is part 2 of his story, continued from our last issue.

"A prouder moment came for me a few years later when I was in college at the University of Illinois in Champaign, which is about 40 miles from my home town of Brocton. I had all this ham gear sitting in my bedroom down on the farm, but nobody was using it. So one day I called my dad from my dorm room and said, "Dad, this is what we're going to do. I'll give up my college weekends to teach you the theory and code. I want you to get a ham license." At that time my dad was 44 years old. I drove home every weekend; in six months he had his license. After all those years of wanting to do that, he finally had his license.

"Boy you talk about starting to build a radio station, we did then. We had a lot of room

INTRODUCTION to FATHER MORRAN / 9N1MM

"While in Nepal, Janice and I stayed in a hotel called Hotel Anaporna. Father Morran drove his little VW bug over to meet us. After he came into our room, he looked at the 2 of us and realized we hadn't been eating real well. (You can only take so much curry over the period of a few days) He said "You people need some food!" I replied "I think you're right." A few minutes later, we were in the back of his Volkswagen, driving through a gate, parking, then knocking on the door of the American ambassador residence. She opened it, exclaiming, "Father Morran! Come in with your friends!" Within a matter of minutes, we were enjoying Vermont ham, Wisconsin cheese, and California wine. This is the kind of man Father Morran was, besides being well-known as a rare DX contact.

"We spent time in many other places like Ecuador, Thailand, and Hong Kong. Janice and I had the opportunity to meet ham on a 1 to 1 basis. It really exemplifies what the spirit of this hobby is.

STATION IDENTIFICATION

"Having been a ham operator has been very useful to me at WBBM. First of all, it has made me a friend with the technicians/broadcast engineers. You want to be their friend, because if you're not, they can make life miserable for you. Fortunately I know enough technically that I occasionally CAN them with the gear, or make suggestions on how something can BE improved. I did floor a technician one evening. He was on the other side of the window, spinning the pots, dials, and knobs, making sure the 50,000-watt transmitter was operating properly. It was 10:30, time for station identification. I said "You're listening to CBS in Chicago, W9CTY!" I looked up, but he wasn't there anymore! He was on the floor! You know, I did get some QSL cards! So for a moment, I think I was the most powerful ham radio station in the world. No, I haven't done that since.

"There have been occasions when people I'd talk to on ham radio would recognize my voice. Once I was talking to a fellow in San Francisco, when he said, "Your voice sounds familiar." He finally put one and one together and came up with who I was. As it turned out, he was a pilot for United Airlines. Occasionally United will patch in WBBM on one of the audio channels on flights arriving in Chicago so that passen-

gers can listen to the news. He had heard me during one of those times. On another occasion, I was talking to a Kansas state trooper, who used to hear me late at night during his patrols up and down the state of Kansas.

We all owe our involvement in this hobby to somebody 'else' somebody who was willing to take us under their wing, and teach us the code and theory. Perhaps it was that strange person next door with those weird antennas in the backyard; someone who everybody suspected of being something more or perhaps less than what he really was; someone who made squiggly lines on your TV set from time to time. The point was, is, and will remain that there are people who want to help. In my case, the person who really wanted to help was my dad, who had that mysterious little radio down in the basement with those strange little green meters, and little green windows with funny numbers I didn't fully comprehend or understand. But I'll tell you what they are: they're windows that enrich our lives."

(This was part 2 of a talk by Dick HELTON / W9CTY, given before the North Shore Radio Club of Highland Park, Illinois, in January, 1991. Dick will celebrate his 25th year of broadcasting with WBBM in 1994.

For an audiocassette of this talk, formatted for airing over Amateur Radio, send a self addressed stamped envelope (SASE) to RAIN, PO Box 2565, Des Plaines, IL 60017-2565. Be sure to attach 2 ounces of postage to your return envelope. Ask for edition 5 of the RAIN Monthly for September, 1993.

From Telephone to Tape

How often have you tuned into your local info net only to find that when it came time to transmit Newline or the RAIN Dialup, the recording made from the phone line resembled that of an old Victrola or worse yet a string with a tin can attached to either end? In this age of digital audio, there is no excuse for this. Ken Piletic / W9ZMR of Streamwood, IL has maintained the Chicago area Newline telephone service since the early 1980's. He has some ideas as to what sounds good, and what doesn't. The following was adapted from his presentation heard in January during the RAIN Dialup Service (708-827-

RAIN).

"A lot of people use the microphone-to-earpiece method of getting audio from the phone. That's where you stick your tape recorder microphone by the telephone handset ear piece. It doesn't work very well. Among other things, you have to be concerned about keeping room noise out. One way is to put the microphone and handset on top of a pillow and put another pillow on top of them. In a pinch, that may be the only way you can do it. However, the audio quality isn't good because you're limited to the frequencies that come out of the ear piece. There are other much more effective methods for getting good audio from the telephone to the tape recorder."

THE SUCTION CUP METHOD

"The suction cup is basically a pickup coil that can be bought at RadioShack (part number 44533) for \$3.99. It's nothing but a coil built into a little plastic housing with a suction cup on the end of it. You can put this device often in one of 2 places. Your older telephone has a big transformer in the base. You can move the suction cup around the base, listening at the same time for the loudest signal, at which time you simply push the cup a little harder, causing it to stick. If that doesn't work, move the suction cup around the back side of the ear piece."

"The advantage of using a suction cup device is you don't have to make any physical connection to the telephone. It's a good way to go if you have right environment for it. However, there are 2 disadvantages. If you attach the cup on the handset, any room noise will be picked up by the handset's microphone. On older phones, you could unscrew the mouth piece and remove the microphone element, thereby that problem. You won't have that problem if you attach it somewhere on the base instead. The other problem is that the suction cup device is actually an inductive coil. AC transformers in your shack putting out some kind of magnetic field can generate hum, depending upon where the telephone or suction cup is positioned. You may have to move one or the other around to hopefully minimize that."

CLIPS TO TERMINALS

"As mentioned earlier, your older telephone has a mouth piece that can be removed, as well as an ear piece. If you

unscrew the ear piece, you'll find 2 wires that are used to make the ear phone work. With a patch cable that has alligator clips on one end and a mini plug on the other, (Radio Shack part number 422421 for \$2.39), attach the clips to the 2 wires, and plug the other end into your cassette recorder."

WHICH INPUT TO PUT IN

"Most cassette recorders have 2 inputs, one is the microphone jack, the other a high level input typically labeled line in or auxiliary. Whenever plugging something directly into the tape recorder, you should use the high level input because what you're plugging in is usually high level. Otherwise you will encounter distorted recordings if the microphone input is used. It won't matter which of the 2 wires you use from the telephone handset earpiece, polarity is not an issue, since neither wire from the handset ear piece is grounded. In some cases one might have less hum than the other. If your cassette machine doesn't have a high level input, then you have to attenuate, or lower, the audio level from the telephone to avoid overloading the microphone input. Another trip through the Radio Shack catalog will reveal 3 attenuator options: a one-piece female RCA/phono plug to male mini plug attenuator (part number 274300 for \$2.99), a cable with male RCA/phono on one end and a male minion the other (part number 422461 for \$3.99), and a cable with a mini male on both ends (part number 422152 for \$3.49). If you're going to use the clips to terminals method for getting audio from your phone to your cassette machine, simply snip the plug off one end of an attenuator cable, and attach an alligator clip to the 2 wires."

CLIPS TO MODULAR

"What if you happen to have a telephone handset that won't allow you to unscrew either the mouth or ear piece? Well fortunately contemporary telephones have modular plugs (sockets) on both the base and handset. When you disconnect the modular cable, you'll notice the socket has four wires in it. With the keyway on the top, the little wires lining the bottom of the socket should be equivalent to the following from left to right: red on the left; the next would be white; the next would be green; and the righthand one would be black. Two of those go to the microphone element, the other 2 to the earphone. We're interested in the second wire from the left, and the right most one regardless of what colors then are. You can get to these

connections by using a modular cable, or another socket. I can unplug the modular cable from my telephone handset, and plug it into a socket I found at a local hamfest identical to that found in your typical handset. I soldered one end of my audio cable to the appropriate wires in the socket. The other end of course goes into my tape recorder. Patching into your telephone by this method does not load down any audio circuits, and will work with your typical modern-day telephone. The other obvious advantage is that when you eliminate the handset from the circuit, you don't have to worry about picking up ANY room noise. Remember you'll need to take the handset off the cradle for this method to work."

PHONE PATCH OR QKT

"If you've run phone patches from a low-band station, you probably know you can get a phone patch unit from most manufacturers of ham transceivers. I won't go into how to connect the phone patch here, but if you have a patch you can take audio from it into your tape recorder."

"The telephone company used to, and may still, provide something called a QKT. The QKT is made for running audio into the phone line, while at the same time protecting the circuit so you don't overload the local telephone switching equipment. However, the QKT can also be used to take audio OFF the phone line. That's the way I do it most of the time when I'm at home. I use a QKT the local phone company provided me some years ago. It's a little box that attaches to the wall and has a high level output. I plug one end of my audio cable into it, and plug the other end into the line level input of my tape recorder. You may have to use an attenuator chord if you have to use the microphone input. As far as I know, the QKT is something that the broadcast industry still uses primarily to protect the phone company equipment, rather than to take audio from it. I have seen these units occasionally at hamfests."

TRANSFORMER OR REPEATER COIL

"The telephone company used to have a device called a repeater coil, which was a 600-ohm transformer with more than one winding. The one that I have has the primary winding plus 3 secondaries. I can put the primary winding directly across the phone line itself. Assuming there is no conversation on the line at the time, the transformer will seize the line as soon as it is connected, giving me a dial tone. In other

words, I have to place the call first, then connect the transformer. Any one of the 3 secondaries can be used for recording purposes. As that secondary will have an impedance of 600 ohms, you may not be able to plug it directly into the microphone input. You'll probably need to run the audio through some kind of attenuator circuit because the volume will be too loud otherwise. I don't recommend you use a transformer because when you're using one, you're going directly across the phone line, which can result in problems with the phone company. However, this is another way of getting audio from your telephone to your tape recorder."

Editorial Note: In addition to the suggestions expressed above, Radio Shack has several devices called telephone controllers in the \$20 to \$40 range that may be worth considering.

If you're making plans to attend the Dayton Hamvention in Dayton, Ohio, the week-end of April 29th, drop by the RAIN/This Week in Amateur Radio booth between forum rooms 1 and 2. In addition, Hap Holly/KC9RP, RAIN's producer and founder, will be one of a number of speakers scheduled to participate in a forum tentatively titled, "Ham Radio News and Views Worldwide" scheduled Saturday afternoon from 2:45 to 5:00 o'clock. It will include live and video taped presentations from New Zealand, Radio Society of Great Britain, and South Africa, plus domestic services: Ham Radio and More, Spectrum, This Week in Amateur Radio, Amateur Radio Newline, and, of course, RAIN. The forum is being organized by Hap and Newline producer, Bill Pasternak/WA6ITF.

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Scanner Frequency Management

by Perry Joseph

Perry Joseph is a programmer specializing in custom database applications. His company, DataFile, Inc., has recently introduced a frequency management system made for IBM and compatible computers. In a series of articles, he will discuss his techniques for frequency management, from simple record keeping to custom database management and finally, the creation of ProScan. You can write to Perry in care of DataFile, P.O. Box 20111, St. Louis, Missouri, 63123 or through Genie BBS, address "P.Joseph."

Radio monitoring can be great times, but keeping track of those numerous "nameless numbers" can be a real chore, creating the need for scanner frequency management.

In my early days of scanners, my radio listening pleasure was limited to a handful of crystals. Having ten channels to choose from, frequency management consisted of a short list typed on a simple sticker stuck to the radio. Certainly the best solution.

Stepping up to a 200 channel programmable scanner created new challenges. Forget the sticker scheme! I wrote out a tentative list, entered the frequencies into the radio and then typed out the final list while thanking God I took typing 101. This, however, proved not to be the total solution.

Programmable scanners offer something crystal radios did not; the ability to reprogram the radio without having to open the box and change crystals. In my first year of owning 200 channels, I changed the frequencies a half dozen times or more. I edited the original frequency sheets by crossing out old entries and writing in new ones, producing a frequency list which looked more like a crib sheet. Eventually, I found myself having to retype these untidy lists.

I did make an improvement in my "typewriter and paper" days by creating a blank form sheet which contained the necessary headers and column lines which I photocopied for ongoing use. At least my mess

looked organized. The list always looked great as long as you didn't change anything. But of course, changing frequencies on a scanner is as synonymous as fish swimming in water.

The advent of programmable scanners also produced another anomaly. The popularity of trading frequency lists with other enthusiasts was on the rise. Now that we didn't have to buy crystals, trying out new channels was as easy as punching buttons. The idea was to exchange each other's frequency lists and try to pick up on new frequencies. The anomaly occurred when having to spend considerable amounts of time pouring over other lists. Having to use a pencil to check off frequencies was arcane and tedious. At times, finding specific frequencies in a list of hundreds would be like finding a needle in a hay stack. My list, ordered by channel number, made it easy to find licensee names when using the list with the scanner. However, making comparisons of my list with others would have been easier if I had been able to reorder my list, say to frequency order, to match the other's.

Bent on being organized, I started using 3" by 5" cards and card box creating a card for each channel. Each card represented a channel. Data included the frequency number, users name, type of user, etc. Making sure the channel number appeared in the top corner of each card, I could easily flip through cards to find, edit, add or delete a channel record. I even used tabbed dividers to divide the cards into sets of twenty. Although this system worked reasonably well, I still could not reorder the records without having to physically shuffle the cards around or keep a duplicate set of cards in another order. I also did not like the fact that I could not enjoy the benefits of a typed list. The card file system offered better organization but was not as fast as being able to scan a sheet of paper and my typing looks much better than my handwriting. All in all, I probably would still use the card file system today, if it weren't for computers.

I discussed several "manual" solutions for

keeping track of scanner frequencies and their licensees. Now let's discuss using computers as a more efficient means of maintaining frequency lists.

My first experience with microcomputers dates back to 1983 while working as a salesman for industrial video gear at a local video store. The owner decided to carry Apple Computers. It was a humble product. Loading data and software into the computer required the use of a modified cassette deck. It would take more than several minutes just to get the darn thing to produce its first screen of information. But it was cheap, and a new item for the consumer market.

I never took the Apple Computer too seriously. It was great for playing games. Let's face it, anything beats "Pong". The Apple's primary drawback was speed, or lack of it. It wasn't until we purchased an IBM "XT" microcomputer that I started to actually use a computer for something other than entertainment. Even then, it was only equipped with floppy drives.

A year or so later, we purchased an IBM "XT" which used a hard disk system. Now we could maintain large amounts of data at a reasonable cost. The microcomputer was finding its place in the small business environment. In the later part of 1986, I decided that microcomputers were the next great product of the electronics industry. I quit my job, purchased a computer system and started DataFile. In any basic "computer 101" course or book, computer software is categorized into five basic groups: word processing, record keeping (database management), communications (using a modem, etc.), spreadsheets (accounting, mathematics, etc.) and graphics (computer aided drawing, games, etc.). The first two categories, word processing and record keeping can be applied to managing our frequency lists.

My first experience with computerizing my frequency list was to enter the data into a word processor. For anyone who has had to use a typewriter to type a letter or a list, word processors are a leap ahead. Word

processors allow you to enter, manipulate, format, print, store and retrieve text. Other features can include word wrap, scrolling, insertion, deletion, move, search and undo. Naturally, I created a list of names and frequencies in the word processor. Now I could change a name or a frequency and reprint an updated list without the scribble of "handwritten days past". Changing a name or a frequency was easy since my word processor had a "search and replace" feature.

Using a computerized word processor definitely had advantages over handwritten notes, but lacked a few necessary functions. To truly be able to "manipulate" the frequency data required a "record keeping system", commonly known as a "database" program.

Database programs allow you to search, add, delete, update, sort print and do some mathematical calculations. What's that? Word processors do the same thing? There is some truth to that statement with exception to database programs tend to do more and do it better when it comes to pure record keeping.

Many of the database managers offer a standard group of features which can be selected through choices displayed in menus. Additional features may include creating custom screen displays, creating custom reports and displaying "help" screens containing available menu choices and explanations to guide the new user.

Database programs generally treat information as some form of a "record". As an example, a frequency record would hold the following information: frequency number, licensee name, transmitter location, type of transmitter, class of licensee, call sign, etc. These descriptions are generally called the "field names".

A database program allows you to sort or "index" a group of records alphabetically or numerically. Sorting or indexing allows us to look at these records in a number of ways. Records can be sorted by a field name or combination for field names, commonly referred to as the "key field(s)".

If, for example, we sort our records by licensee name first and frequency number second, and we had a number of records with the same licensee name, the sorted list would group these names together in name order followed by their related frequency numbers in frequency order. Using this same sorted list, we could print our records on a select or "filtered" basis. For


example, we could print a report for those licensee names which began with the letter "A".

The overall advantages to using a database manager over a word processor in organizing my frequency list was speed and the ability to manipulate my information. Now I could lookup and change a record with very little effort. I could easily compare my list with another list without concern for the "other list's" order. Checking for duplicate frequencies was a snap. I could customize my screens so that a record consisted of the data I specified. I could also create customized reports.


In my next installment, I will tell you about some of the more popular database programs, some of the considerations that go along with purchasing them and the type of database programming used to create ProScan, the frequency management system.


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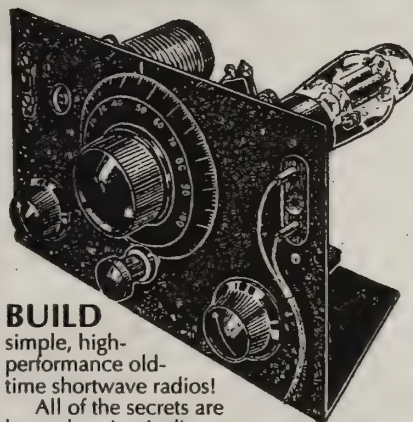
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Analyzing Audio Signals with the Sound Blaster

Gene Harlan - WB9MMM

While developing the program, "Slow Scan Television for the Sound Blaster", I was in need of a method of visually 'seeing' the wave forms that I was working with. There is not a lot of information available on the different wave forms that are used in slow scan. Thanks to some of the great people on the Saturday Slow Scan nets, and by buying a copy of the Robot manual for the 1200C, I was able to piece together what I needed. But I still needed something to look at existing wave forms and wave forms that I would create to see that I was doing the right thing! Therefore, the **Audio Analyzer** was developed.

The main screen is shown in Figure 1 and shows the choices of being able to capture sound real time off the air or by replaying from a saved .VOC file, and the ability to record to the .VOC file. The reason to have the ability of playing back from the .VOC file is that you can replay the 'sound picture' over and over, where the real time capture disappears after it is displayed.



Figure 1. Main screen for the Audio Analyzer

The format if the display is that the frequency is displayed in the left side in the vertical direction. Markers are drawn on the screen for 600, 1200, 1800,

and 2400 Hz. The bottom of the screen is Zero and the top is 3000 Hz. This range can be adjusted up or down to view other ranges. The horizontal axis is representative of time, but not in a linear fashion. Each waveform that is decoded is displayed as one pixel (dot) on the screen. Therefore, one pixel at 600 Hz is not the same length of time as one pixel at 2400 Hz. A method to measure time was needed (I'll get to that in a little bit).

An 8 second black and white waveform is shown in Figure 2. You can see the sync pulse at 1200 Hz (two of them) as well as the varying tone from 1500 to 2300 Hz. The 1500 Hz tone will produce a black pixel in Slow Scan while a 2300 Hz tone will produce a white pixel. The frequencies in between produce shades of grey. If you look real close, you can see the picture of a bird (just kidding...). The waveform is of a bird sent, as I stated, in 8 second black and white.



Figure 2. Waveform for 8 second Black & White

To give another view of what the video signals look like, figure 3 shows a grey scale image sent in 8 second black and white. As you can see, the tone changes from 1500 Hz (black) to 2300 Hz (white) in 16 steps. This waveform is one that was made for

THE QRP CORNER

by George Franklin W0AV

QRP CORNER #13

It seems as though interest in QRP is growing by leaps and bounds, judging from the new rigs advertised in the ham magazines. Also, attendance at QRP forums at recent ham events have been well attended. Best of all, there are many young faces in the audiences. This alone makes QRP operation a valuable commodity, to be nurtured and expanded. Contrast this with the typical ham club meeting. Many look more like a senior citizens outing of some sort, with the average age of attendees somewhere between fifty and sixty years!

I recognized many familiar QRP calls during the 93 ARRL Field Day weekend. Those little 5-watt (and often much less) signals were right in there with the big boys. The only difference was that the QRPers were having a lot more fun; well, at least that's my personal opinion.

Speaking of new QRP rigs, the Ten-Tec Scout is making an excellent name for itself! The Scout, a 50-watter, (easily adjusted to 5 watts) may seem a bit on the expensive side to some QRPers, but it has many outstanding features, including an excellent built-in keyer. It costs less than half the price of the TS-50, which many QRPers (including yours truly) have made their "dream" portable/mobile HF rig.

The latest block-buster to hit the QRP scene is the new MFJ Model 9420 SSB transceiver at \$219.95, fully assembled and ready to use. Now that is a lot of radio at a very reasonable price. It features single-band SSB operation at 12 watts PEP output, RF speech processing and an S-meter. Full CW capability, including semi break-in and sidetone costs only \$39.95 more. The 9420 is especially suited for portable operation, since the receiver draws 50 to 100 mA. Other QRP rigs are handicapped by receiver current requirements of a half Ampere or more. At 12W

PEP the 9420 draws only 2.2 Amperes. A compact battery pack will provide many hours of operation. Recognizing one of the shortcomings of the 90-series CW rigs, MFJ designed the 9420 to provide a full one watt of audio, enough for just about any situation. No doubt, the 20 meter version will be followed by similar units for other bands. Make no mistake about it, 12W PEP will put out a very respectable signal even with makeshift antennas of the type usually employed on field day and portable expeditions. The 9420 will do for the "budget conscious" SSB enthusiast what the 9020 did for the CW gang, i.e. let him get on the air with a "real" rig without mortgaging the old homestead. I haven't yet been able to get my hands on a 9420, but I have a feeling there is one of these little rigs in my future.

For those who prefer to "roll their own" there are a number of interesting transmitters, receivers and transceivers in the magazine ads. They are all wonderful QRP projects, and are, in general, quite inexpensive. I strongly recommend the British publication SPRAT (c/o Luke Dobbs, W5HKA, 2852 Oak Forrest, Grapevine, TX 76051) to those QRPers who are dedicated builders. Every issue is loaded with unique projects, circuits, antennas and gadgets. The UK advertisements are fascinating; many suppliers there take VISA and MasterCard for shipments to the USA.

A few weeks ago I received a complimentary copy of the excellent "NWQ Newsletter" published quarterly by The North West QRP Club. The October issue (Volume 2, Number 3, 10 pages) was packed with interesting QRP information, including build-it data on a very clever 5-watt MOSFET 10M CW rig using the Radio Shack (two bucks) IRF510. An advertisement which caught my eye was the new MXM Industries (phone 512/237-3906) "Simple Super RX/TX single-band CW transceiver at only \$79.95. It features 2 to 3 watts output, superhet receiver and crystal of your choice (80, 40 or 30 M). The "Letters and Comments" section, a regular feature, was especially fascinating to me. My copy was sent through the generosity of N7MFB, President and Publisher, whom I worked in the recent NWQ Sprint event. Membership, including the quarterly newsletter, is \$10.00; The North West QRP Club, 4153 49th Avenue, SW, Seattle, WA 98116. Try it; you'll like it!

An exciting, new publication called HAMBREW, published by George, W0K, Lakewood, CO (Quarterly, \$20/year), has just made its debut. Volume 1, No. 1,

Autumn, 1993, reached me a few days ago. It contains a very fine collection of homebrew articles in an extremely attractive format; glossy paper, clear photographs and schematics, along with a selection of advertisements of interest to homebrewers, especially QRPers. A classified ads department is available at no charge to subscribers, one 15-word personal ad per issue! Call 1-800-5-HAM RIG or write to POB 260083, Lakewood, CO. to enter your subscription. You'll be glad you did.

Another good source of homebrew projects is "The 5-watter," the quarterly publication of the Michigan QRP Club (POB 80804, Lansing, MI). If you haven't seen a copy, you are really missing some great QRP ideas. I defy you to read either SPRAT or TFW without getting inspired to fire up the soldering iron (that is, if you are a real, red-blooded QRPer).

As you can see, I'm really a dedicated QRPer, although I do from time to time suffer a temporary relapse and work a couple of stations QRO (100W). Immediately afterwards, however, I always suffer guilt syndrome and revert to 2W to make atonement. Who needs QRO?
de George W0AV

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'DIGITAL FRAMESTORE'

FACSIMILE and SLOW-SCAN TV Column



Written by Fred Sharp W8ASF

4676 Hamlets Grove Drive, Sarasota, Fl. 34234

Putting SSTV aside for the while, there are some new things going on in the Weather Satellite field. We finally got a new polar orbiting bird, NOAA 13 which lasted about a month or so. I got a few nice passes and then the other nite my Instant Track program told me that NOAA 13 was going to pass directly overhead! All switches were at the ready...and.....NOTHING...

The same thing that happened to the NASA martian space probe. Probably some 30 cent transistor again. We have a total of about \$1,067,000,000.00 possibly down the drain, unless the shuttle can help out with NOAA 13. I hear rumors to that effect, but I can't understand how a shuttle, just above the earth's atmosphere can control a satellite, up 500 miles, or in this case, contact it. This is the second satellite failure in as many years, with the failure of our last GOES launch to achieve orbit.

Lets hope with the proposed merger of USA and Russian talents for the space station, we can also straighten out some of this mess. I'm assuming that NOAA 9 will be reactivated again till we hear from NOAA 13 (Maybe they should have named it NOAA 14!)

SSC FORGES AHEAD

I have just heard from Software Systems Consulting about the new PC HF Facsimile 7.0 upgrade from Version 6.0. I happen to be using SSC soft and hardware for all satellite and FAX reception and it cant be beat. The new Version 7.0 has an overlay menu and runs in Windows or DOS. Something new is full mouse sup-

port. It has Ham 480 line mode support and PCX and GIF import and export and will export TIFF formats. Other new features are: Save/Load frame loops, automatic tuning, expanded printer support, resolution limited only by memory, user editing of online broadcast list.

For more details on this marvelous FAX system call SSC at 714 498-5784 or FAX 714 498-0568. They accept credit cards.

SOMETHING NICE TO SEE

Russian Meteor 2-21 is launched and operational!!!! The CIS launched a new METEOR class platform (Meteor 2-21) on August 30, 1993. This older bus was launched from the Northeastern region of Russia on a Tsyklon Booster. The launch was approximately 04:41 UTC on August 31, 1993. The satellite is currently in a 930 x 977 Km high near polar orbit, inclined 82.5 degrees to the equator. The frequency for this bird is 137.4 MHZ.

The U.S. Space Command lists this platform as 93055a with international number 22782 in the NORAD elements. Two line NASA format for Keplerian data is:

```
Meteor 2-21 1 22782U 93 55 A
93244.84606084 .00005435 00000-0
49769-2 0 84 2 22782 82.5442 74.9334
0021661 315.9639 44.0690 13.82988141
233
```

As always, my thanks to Datalink BBS for the data.

SSTV GOOD NEWS FROM JAPAN

With approval from Japan, I am taking the liberty of reprinting verbatim from the JASTA Newsletter Summer 1993, sent to me by Yoshi Iwasaki. Joe Hasegawa JJ3LCH closes the newsletter (which I present, partially edited) with the hope that his English is OK. Actually, it's better than mine!!

THE THIRD SSTVERS MEETING IN JAPAN

The meeting was held on June 19 & 20 in Tondabayashi, Osaka. More than a hundred SSTV fanatics gathered there from all over Japan. While the eyeball QSO's were going on, some 30 technically minded amateurs had a keen discussion on the new JA mode. The technical meeting was chaired by JA6OAC with the attendance of the leading SSTVers in JA including ex-JA6UHL, Mr. Nishimura who developed the epoch making SSTV-202, the one board scan converter used by the NEC Computer utilizing a DSP chip, JR3RPO who developed the ONION EPROM for NS88 and NS91, the most popular ROBOT 1200C type scan converter in Japan, JA2HYD/1 who developed the scan converter control program, CONT1200, which is widely used in Japan and JA9JQC who designed a completely new scan converter using 16bit CPU 68303. The discussion started at 8:30 PM and lasted till 2:00 AM next morning with only a short coffee break.

The theme discussed here was the new format of SSTV which is open to everybody and would be available free of charge to anyone. Recently too many incompatible modes have been developed, and without some specific Eproms, we can't even see pictures. This is really quite frustrating, especially to newcomers whose scan converter is equipped with only the conventional Robot Eprom. This somewhat messy situation motivated us to develop the open format of high resolution pictures, i.e. The JA mode.

First JA6OAC proposed his idea of the JA mode which is based on RANDOM BLOCK SCAN SCHEME.

Through the discussion it was modified and we ended up with the innovative concept of the JA mode. Now here is a summary of the minutes of the discussion.

THE NEW JA MODE

First, JA6OAC made a keynote speech. The points are as follows:

* The recent Eproms are too expensive for us.

* The format should be fully open to everybody so that the JA mode would be the STANDARD MODE, not only in Japan, but all over the world.

* We will abandon the LINE SCAN, instead we adopt a completely new concept of RANDOM BLOCK SCAN.

* One block is composed of 8 x 8 pixels.

* This scheme should give best immunity to QSB and QRM.

* Each block should have the address header so that it can be received correctly, even from the middle of a frame.

Based on this keynote the discussion started, and gradually a vague but innovative idea came up:

"Instead of dividing a picture into small pieces, let's use TIME AXIS...namely longer time reception would make a high resolution picture. A picture is divided into several frames not spatially, but in terms of frequency spectrum. You will get a coarse picture when you receive the first frame, and you will at least know what kind of picture it is.

The reception of the second frame will modify the picture on your display and you will see some more detail. The third frame will further improve the picture, and soon. You will eventually see a high resolution picture after 4 frames.

This concept is unanimously decided to be the basis of the JA mode.

Some more requirements added to this concept are as follows:

* The JA mode should be upwards compatible to the Robot 24 sec mode, so that those who don't have the new Eprom equipped can at least see the video.

* A high resolution picture is composed of 4 frames.

* It takes 96 seconds to complete one high resolution picture (24 sec/ea frame)

At the end of the discussion, we asked JR3RPO and ex-JA6UHL to develop the program for the JA mode. JR3RPO will work for the Robot 1200 clones and ex-

JA6UHL for his SSTV-202.

MY THOUGHTS

There is absolutely no question that there is a need for some standardization in the field of SSTV. There are now approximately 40 to 50 different modes of transmission (and reception) When AEA's AVT system was introduced, it included all these modes. What a great system to be able to work all these modes!! What a great pain-in-the-neck to have so many options. It's like having a choice of automobiles to buy; one that runs on gasoline, one on propane, one on alcohol, one on chicken fat, one on cattle dung, etc, etc.

The JA concept to my way of thinking is a step in the right direction. It is my hope that the 96 second single picture transmission time could be shortened, but there are those who still use the AVT 128 second almost exclusively.

14,230 MHZ seems to use all modes while 14,233 MHZ seems to lean to the AVT modes. I WOULD STILL LIKE TO SEE some brave amateurs actively use 15 meters and 40 meters for SSTV. When I tune these bands at the SSTV frequencies there is ABSOLUTELY NOTHING to be heard. Certainly, the use of 15 and 40 would help with the heavy traffic on 20 meters.

The work being done on the JA system is to be commended as it is the first attempt at standardization of one universal, free mode. I commend them for forward thinking.

MORE JAPAN NEWS

* JASTA has compiled a SSTVers only call book. It contains about 500 calls and is available from JASTA.

* Noise Reducer SDU-101 by Mr. Nishimura designed for SSTV exclusively a digital signal processing chip is used in the design.

* A genuine concern for the SSTV mode itself (Author)
My thanks to Yoshi Iwasaki JA3CF for this information.

Any questions on any of it can be obtained from Yoshi at 1232-1 Hiro, Hirogawa Aridagun, Wakayama 643 Japan

WHAT ELSE

Sometimes, in preparing to write a column, you gather all your material together and try to sort it into categories that make for interesting reading. This is assuming you always have material at hand to do this with. Well, I'm going to be interested to see what develops here, because I'm starting without anything to say, except that I just returned from a short vacation to try and find "Hard Hearted Hannah" in Savannah. What a lovely town. I drove eight hours to get back, have an ear infection and haven't been to bed yet. It's 6:11 AM and here I am trying to pound out a column on Slow Scan TV and some new Weather Satellite news. Wish me luck!!

WEATHER SATELLITES ... THEIRS AND OURS

We have come upon lean periods. For the past two or three weeks, I have heard no Russian birds. This means either they are not turned on over the USA or Meteors 2-21, 3-3, 3-4 and 3-5 are off. Meteor 2-21 was only put up a month ago on 137.4 MHZ. It's now on 137.85 MHZ but haven't heard it lately. The NOAA series polar orbiters are playing on again/off again too. Inasmuch as NOAA 13 is dead, I had thought others would make up for that loss. Now I don't hear NOAA-9 and the passes for the others are not consistent. When I stop pounding these keys, I'll try calling NOAA and see what they have on their mind. I just had a nice pass from NOAA-12.

OH ... THEM GOOD OLE DAYS

I'm afraid that the day of the home brewer and experimenter has come and gone. That's really a shame, because most of us learned radio and electronics by building, not buying. Time was, when the only thing you bought was a receiver. Times have changed to the point where even the Ham radio magazines are short on circuitry and hints and kinks. The average Ham Radio Magazine (guess who) contains about 12% circuit discussion and the balance of 88%!! is advertising. Another magazine, who shall remain nameless spends more pages on contest results from Bald Rat Mississippi and setting up that new .0000000001 watt qrp to work from your attic to another qrp in the basement of a farmhouse in Botenschick Tasmania, along with building that "hot" little tranceiver in a sardine can than constructive building hints. I remember at one time I wrote a completely mythical technical article with Rick,

WB8RTK that was accepted by this rag.

It's no wonder that the Amateur is not prompted to build....He's prompted, in no small measure to BUY..BUY..BUY. Granted, circuitry is a little more complicated now, what with a basic change from high voltage, low current to low voltage, high current. I'm referring of course to the difference between vacuum tubes and solid state devices. I remember when one of my prize possessions was a set of Greenlee Socket Punches. The wire was #12 then and #26 now. Most of us who have been around a number of years still have #12 fingers! That was a little aside that I thought needed saying.

By the way, trivia for your collection: October 4th, 1993 was the 36th anniversary of the first earth satellite launch.

What with all the problems that beset Russia lately, like the bombing of the Moscow White House, the Russian space program goes on and on and on and on! The expedition 14 crew of Vasily Tsibliev and Aleksandr Serebrov continue in orbit aboard the MIR complex. On their September 16th and 20th spacewalks they installed a boom called Ripana on the station; experiments will be mounted on the boom. On the third spacewalk they were intending to carry out a detailed photo survey of the stations exterior but Tsibliev's space suit overheated and the space walk was cut short after only an hour and 55 minutes. The astronauts managed to exchange some exposure sample containers before the problems arose.

A Russian geostationary satellite, RADUGA, international designator 62A was launched on September 30th from Baykonur. Launch vehicle was a PROTON/BLOC DM so all in all, the Russian space program seems to be carrying forward in spite of that nation's problems in that it has also launched satellites on September 7th, 16th and 17th.

MORE COMPUTER SSTV

One of the most remarkable developments is that of Gene Harlan WB9MMM who wrote some software so that a SOUND BLASTER card could be used to send and receive SSTV. The system is compatible with SoundBlaster, SoundBlaster Pro, SB 16, Thunder, PAS 16 and Fusion 16, so there is something new besides Dr. Sbaitso.

The system requirements are nominal, an IBM or clone, VGA display (640 x 480 x 256 colors). VGA card requires at least 512K memory. Audio from receiver connects to

microphone input on Soundblaster and to transmit, take the Soundblaster audio output (right or left channel) to the mike input on the transceiver. The software is included on a 3-1/2 " disk.

For much more information than my limited space affords here, contact Gene Harlan WB9MMM, 5931 Alma Dr. Rockford, IL 61081. The price is the most amazing feature, only \$20.00 to actually receive and transmit using the Sound Blaster. Gene's new SLOWSCAN II also used with Sound Blaster will send and receive 8, 12, 24, 36 second ROBOT and Color Modes (Displays in black & white: 36 and 72 second ROBOT, Scotty 1 and 2. Only forty bucks (\$40.00 that is) A couple of sweet deals.

SSTV EXPLORER

John Langner of Pasokon (Absolute Value Systems) has come up with another great product for those who don't have an amateur license, or anyone who just wants to receive color SSTV, The SSTV Explorer..It is receive only and works in all modes in full color except AVT. I hate waiting a minute and a half for one picture anyway! SSTV Explorer package includes an RS232 interface with electronics inside and cable and connector for audio input from your receiver, software and instructions and all for less than \$100...actually \$94.95 to be exact.

I've just installed it and have been amazed at how versatile and really perfect this software/hardware package is. A very interesting colored menu screen comes up when you run SSTV. I have a graphics directory and SSTV Explorer will retrieve all the GIF pictures I have in Graphics. It will list all my directories, including Hires and will display HRZ files, PCX and TARGA. The program uses a mouse, if you have one and the colors are startling. There are two selectable dithers. A dither merely breaks a picture into dots to give apparent better resolution and color gradients. All these changes happen in your eyes and brain.

The top of the menu screen contains the following: DESK FILE EDIT MAKE. The desk menu tells about the SSTV system. The File menu has OPEN SAVE PRINT NO JUNK AUTO SAVE and as with all File menus: QUIT. EDIT has things like INVERT, ROTATE, ZOOM, ETC, ETC. MAKE makes color bars, checkerboard, circles and some other graphics.

It's a great way to get into SSTV and I would imagine it has excellent resale value, if you decide to get a ham ticket and send as well as receive. For more information, contact John Langner at Absolute Value Systems 115 Stedman St, Chelmsford, MA 01824-1823 or call area 508 256-6907. Try it...you'll like it.

AND STILL MORE!!

FAXCAP, a brainchild of Bill Nolle who thought it would be nice to be able to receive FAX, WEFAX and Satellite pictures and even receive SSTV for a grand total of \$29.95 plus \$2.00 for shipping. Faxcap consists of a metalized RS232 25 pin connector with a few feet of cable and a plug along with varied software, including Hamcom22, JV FAX51 and PKTMON. This software will permit you to also receive RTTY, Morse and other digital modes. By the way, the connector plugs into a serial port on your IBM and the plug on the end of the cable plugs into the audio from your receiver. Fax can be saved to the GIF format and printed out on a dot matrix or laser printer.

Ciao from Fred Sharp W8ASF

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GOES IMAGE RECEPTION VIA SATCOM 3 (GOES TAP)

by Jim Kocsis

GOES IMAGE RECEPTION VIA SATCOM 3 (GOES TAP)

It is not widely known but there are three subcarriers on Satcom 3 transponder 17 that have WEFAX data from the GOES weather satellites.

Satcom 3 is located at 87 degrees West and transmits on "C" band (3700 Mhz to 4200 Mhz). The three subcarriers can be heard by using a simple FM receiver connected to the baseband output connector on the satellite receiver. This article describes a simple receiver that can be used to receive these subcarriers.

Circuit Description (Figs 1,2 & 3)

The baseband signal level out is quite high (40 mv. from my satellite receiver) so no RF amplifier stage is required. However, two tuned circuits are included to filter out any unwanted signals. An optional attenuator was required in my unit (Fig. 4)

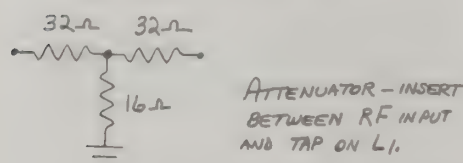


FIG. 4

to prevent overloading the mixer. The oscillator and mixer are standard circuitry and produce the 455 khz. IF signal. The IF is determined by the filter manufactured by Motorola (it is called a Permakay filter). It is the special wideband version (the -3dB points are +/- 15 khz) and can be found at hamfests. It is part number TU-540-W and was used in their tube receivers in the 1940's and 1950's. The part is old but is potted and of typical Motorola design - very rugged. The filter should be checked with a signal generator and scope to verify it is still good and to find the exact center frequency. (I've seen them vary 1 to 2 khz from unit to unit). The filter sets the bandwidth of the entire receiver so it is one of the critical components. Too wide a filter produces noise in the picture and too nar-

row a filter produces distortion due to the signal being "chopped" by the filter.

The three following transistors bring the signal level up from approximately 30 mv. at the filter output to 5V peak-to-peak at the input to the CD4046 PLL. The PLL is adjusted for a bandwidth of 40 to 50 khz and a center frequency of 455 khz. The extra bandwidth is used to accommodate any drift in the components values in the oscillator of the PLL. This extra bandwidth will prevent the signal from deviating outside the PLL "lock range". No audio amplifier stage for driving a speaker is shown. If you drive an audio amplifier chip such as a LM380 you will need to buffer the high impedance output of the '4046 as well as reduce its level. A simple OpAmp with a gain of 1 would work fine as a buffer.

Adjustments & Construction

L1 and L2 can be checked with a grid dip meter for resonance at one of three frequencies of interest: 1.567 Mhz, 1.880 Mhz and 1.927 Mhz. L4 can be checked similarly but a frequency counter is more desirable. L3 is a bit different since its resonant frequency is 455 khz, far below the range of most grid dip meters. A signal generator and scope loosely coupled will show the resonant point. Use small coupling capacitors (10 to 20 pf. - Fig. 5).

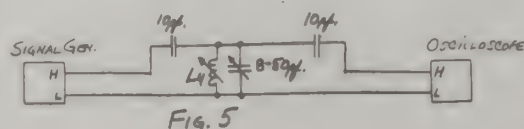


FIG. 5

An IF transformer from an AM radio would probably work too, though one was not tried.

The last adjustment is the PLL. The two pots (R1 "center freq" and R2 "width") interact some so each will have to be adjusted several times. (The terms "width"

and "center freq" are not exactly accurate since the frequency input vs voltage out curve gets compressed as R2 decreases. R2 is a "width" control in a loose way. See the IC data book on the CD4046 for a much more complete description). Connect a frequency counter to pin 3 or 4 of U1. With the .33 uf capacitor between Q5 and U1 disconnected adjust R1 for the center frequency of the Permakay filter (approximately 455 khz.). Then alternately connect pin 9 to +12V and ground to find the approximate lock range of the PLL. This range is indicated on the frequency counter. To widen the lock range increase the resistance of R2. Note that changing R2 will shift the free run frequency of the PLL so R1 should be readjusted for a 455 khz indication. Keep adjusting R1 and R2 while alternating pin 9 between ground and +12V. Leaving pin 9 floating will let you monitor the free-run frequency of the PLL. Try to get approximately 40 to 50 khz bandwidth so component drift in the PLL (R1, R2 and the 200 pf. capacitor) doesn't shift the PLL oscillator frequency. Too large a shift will cause distorted audio and pictures because the incoming signal goes "outside" the lock range of the PLL.

The gates of Q2 can be connected to a simple circuit (Fig. 6)

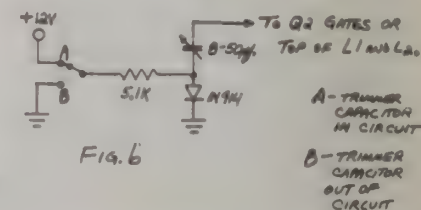
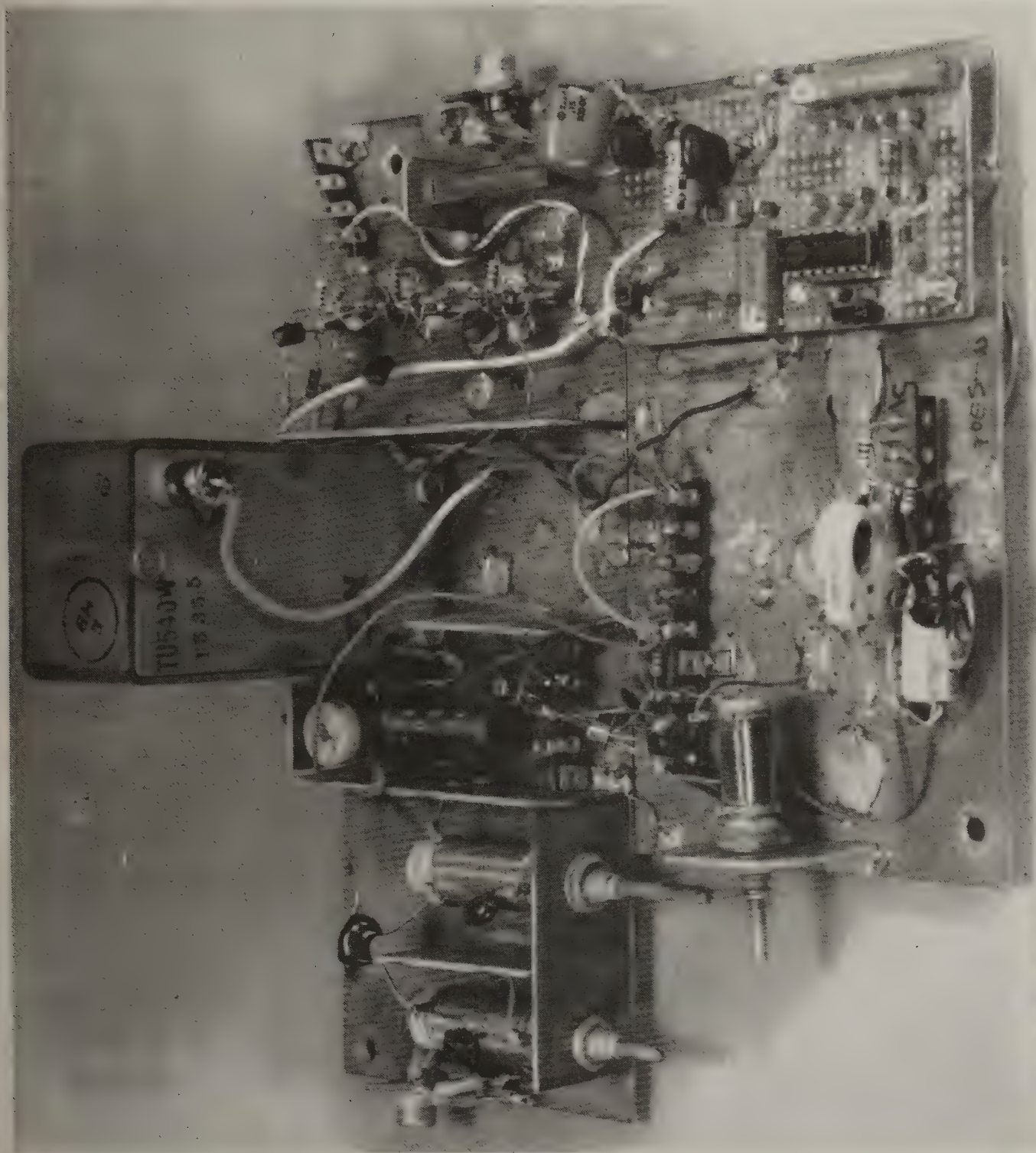
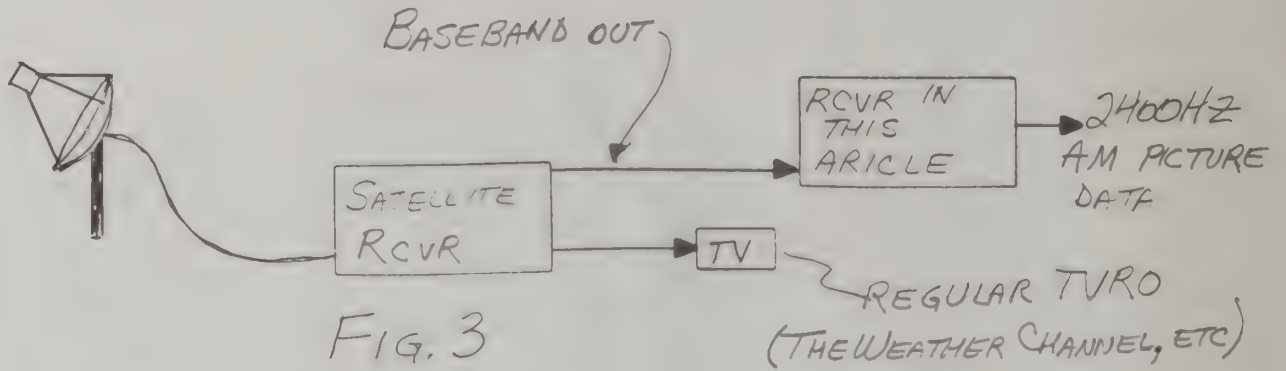


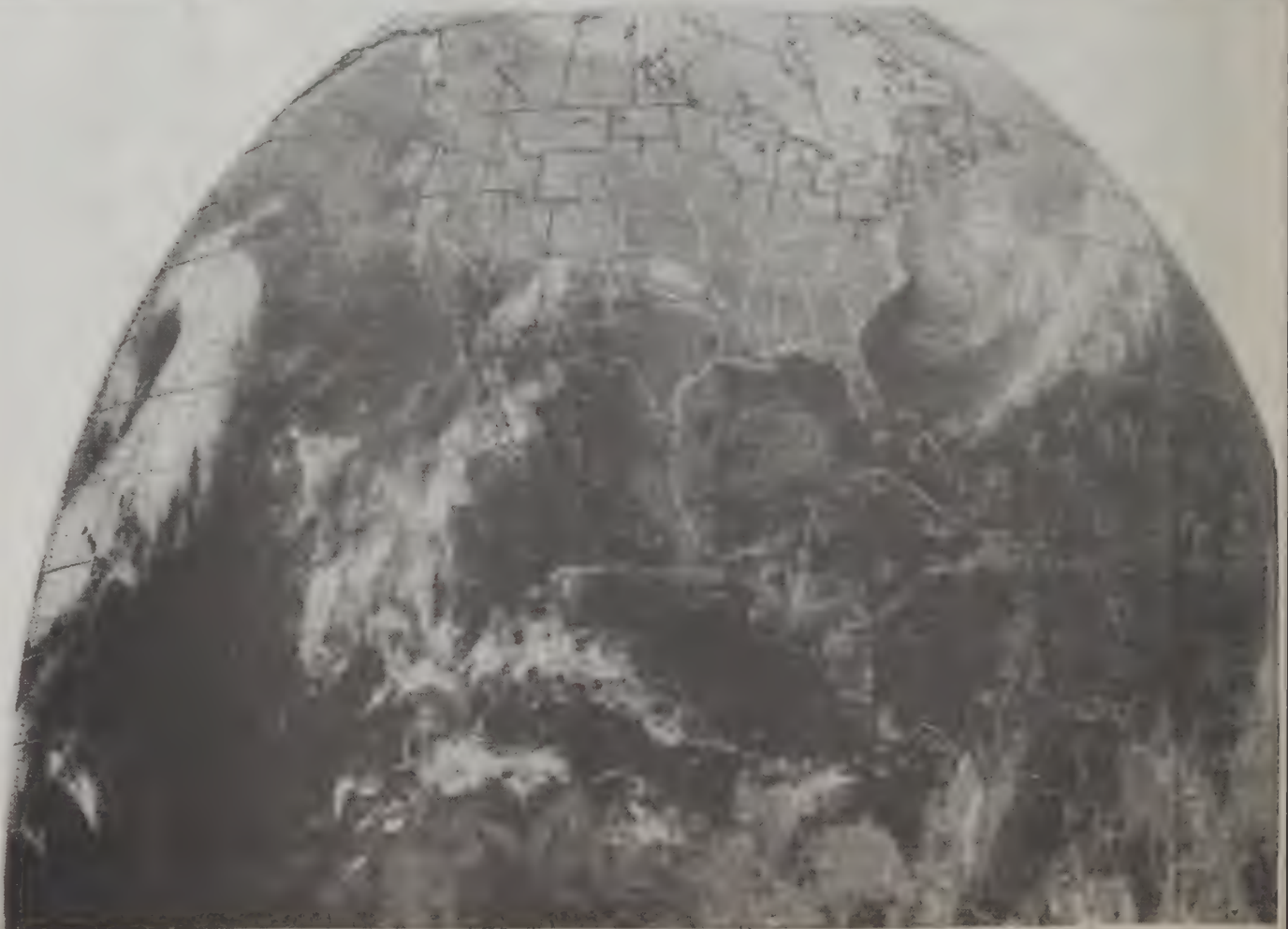
FIG. 6

to allow setting the local oscillator to any of the three subcarrier frequencies rather than using a variable capacitor to select the frequency. I tried this on the local oscillator and saw no degradation in the oscillator performance. The circuit uses diode switches and a trimmer capacitor to lower the resonant frequency of the tuned circuits. I haven't tried this on the RF input circuits since they are broadband enough not to need tuning. However, you may want to tune these circuits too if you make them more selective.





↑ 00:01 11FE89 29A-Z 0105-1640 ED1 ↓



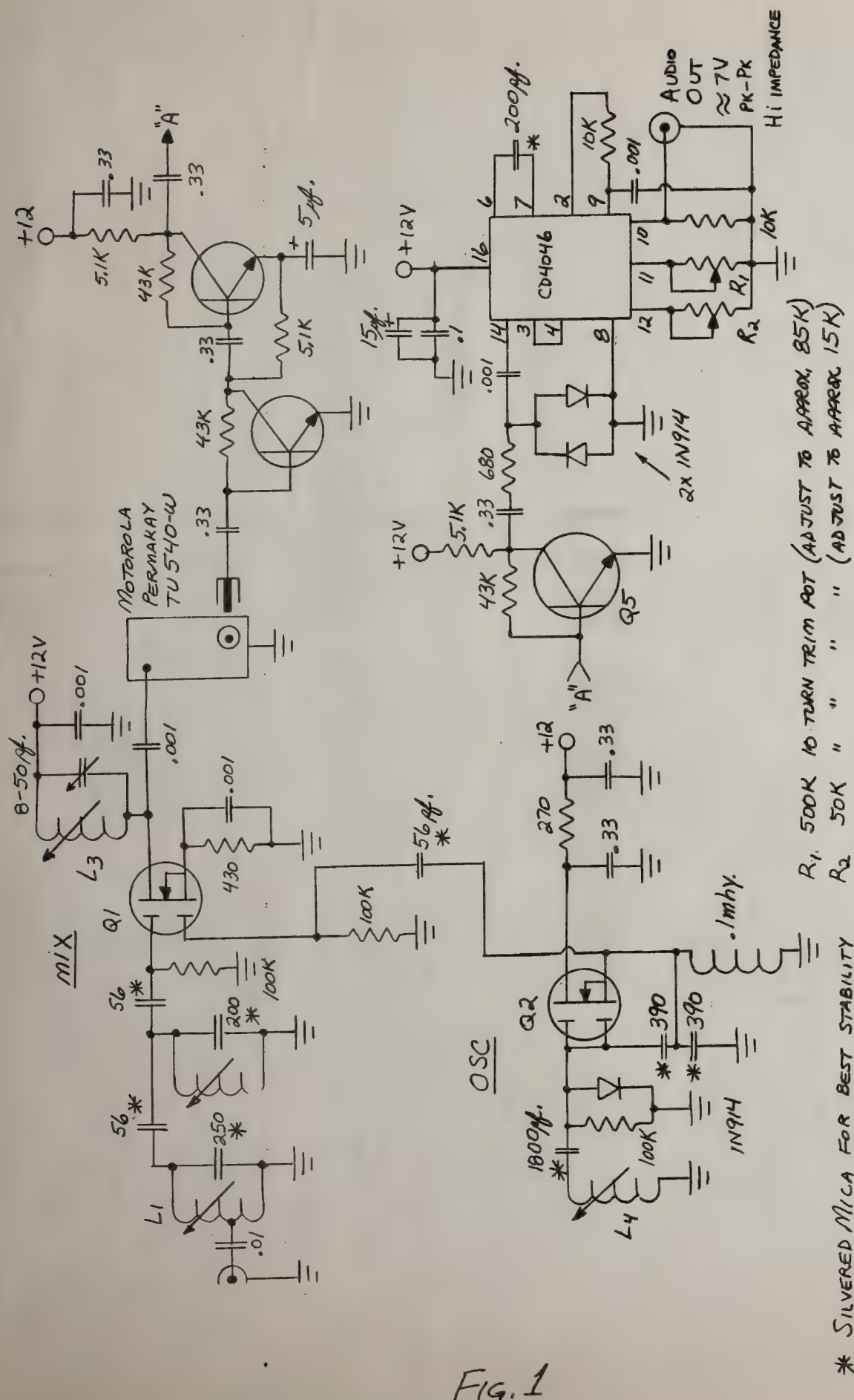


Fig. 1

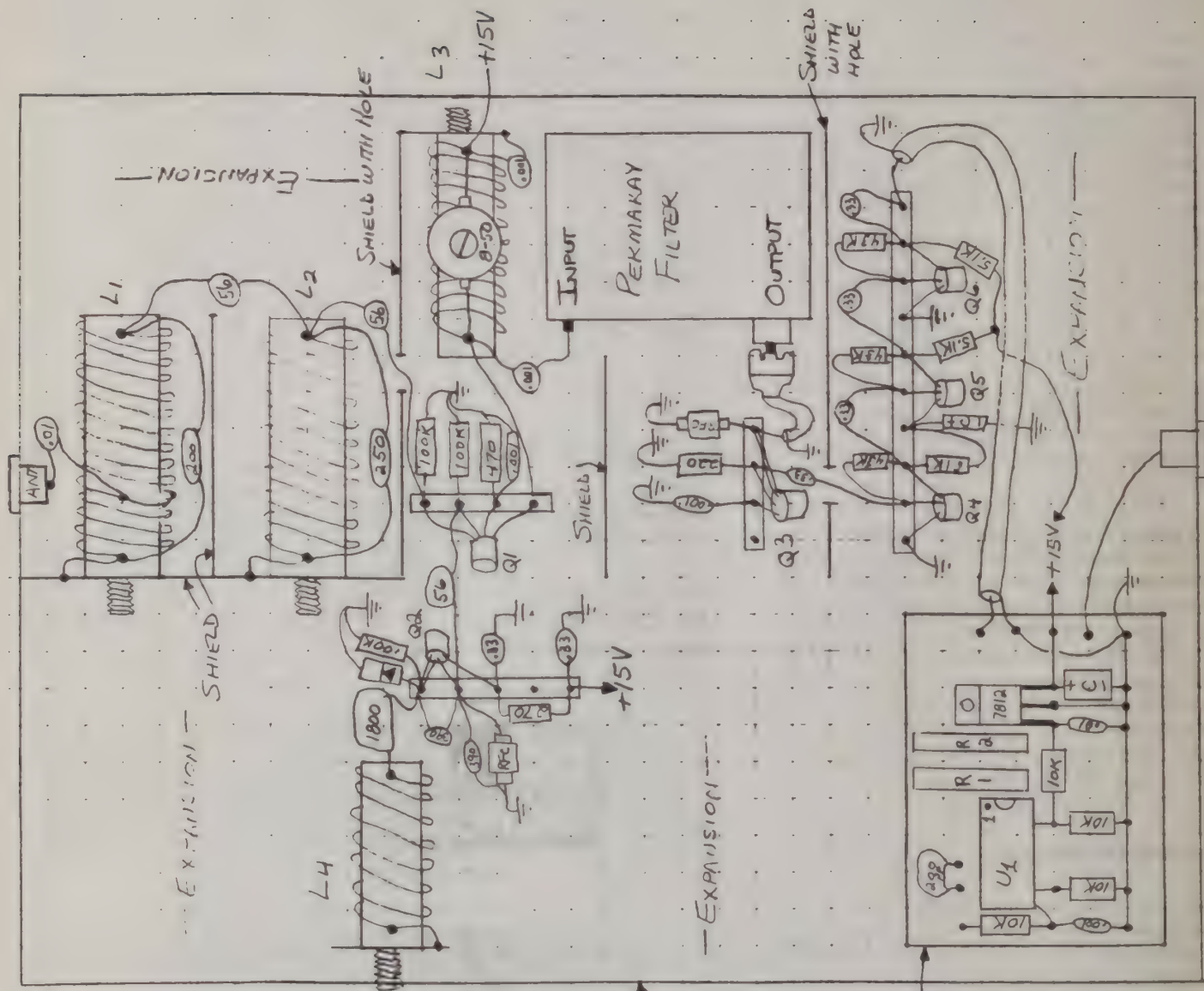
FULL SIZE
SUGGESTED LAYOUT

PRINTED CIRCUIT
BOARD MATERIAL

FIG. 2

PERF BONDED

AUDIO OUT CONN.



The frequencies in use here require that all leads be reasonably short (1/2 inch). The receiver is most easily built on a piece of copper clad board -available at most hamfests. Small pieces can be cut and drilled to mount the coils and provide shielding between stages. The PLL circuit was constructed on a small (2" x 4") piece of perforated board using Vector pins and mounted on standoffs. All other circuitry was built on terminal strips with their ground lug pin soldered to the main board. The hardest component to find will be the Motorola Permakay filter. It measures 1-3/4" x 1-3/8" x 3-3/8" and mounts with 4 screws. The filters are used in their "G-strip" line of receivers. The part number on the filter must be TU-540W and NOT TU-540S. The "W" type is the wide version, the "S" type is the narrow version ("S" stands for sharp?). I am told that the filter is guaranteed for life by Motorola indicating the quality of the device so even if the rest of the radio you find it is trashed, the filter is still probably OK.

The price of most components is very low. The filter should be \$5.00 or less. Other components are very cheap. The FETs I used are expensive but were on hand from other projects. 40673's should work for Q1-Q2. The other transistors are 10 cents each at any hamfest. The coils are hand wound on junk box forms. The PLL IC is approximately 75 cents from various vendors. Good sources of parts are Digikey, Jameco and JDR Microdevices.

Use and Performance

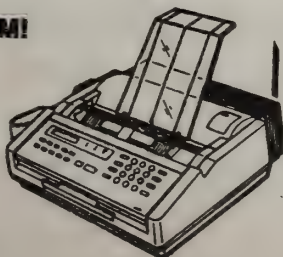
I connected the audio output from this receiver to a demodulator that is described in QST August 1985. From that I drive a Xerox Model 400 fax machine and a Zenith Z-100 IBM compatible with a high resolution color board (8 level gray scale with 640x350 pixels) and obtained high quality pictures. A sample fax image is shown.

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I would be interested in hearing from you if you build this receiver. I'm not an RF engineer so I learned a lot while designing and building this receiver and certainly welcome any changes to improve its performance. My main design goals were simplicity, good performance and low price. All three have been met as far as my needs were concerned.

Please keep in mind that while it is legal to receive these subcarrier signals, the images you generate cannot be used for personal gain or profit.

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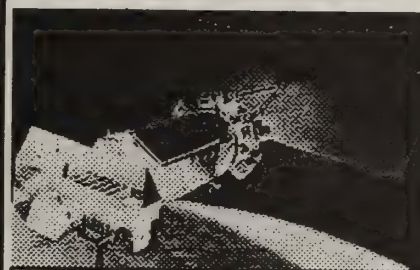
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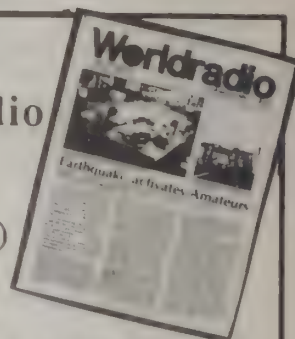
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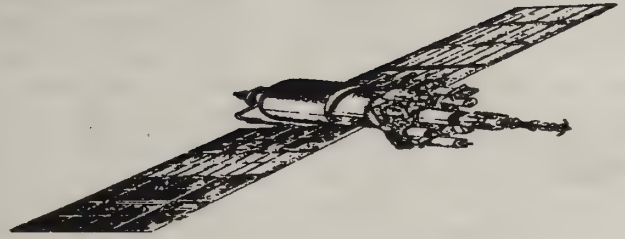
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Bird Watch - NEWS about TVRO



Bird Watch

In our second edition of "Bird Watch" we will continue to bring you the news related to the TVRO world both video and audio. I am very happy to welcome a very special beginners question and answer supplement from Gary Bourgois who is quite active in the internet discussion of TVRO, the host of Friday Night Live on LTRN and a very helpful source of information. I hope we will continue to receive contributions from Gary for this section of our magazine. If you have news, ideas, questions or comments for the Bird Watch section send them to us and we will try to include them in future issues.

Conservative Programming

NET started its programming at 5:00 (local time) with Home Business, a show, devoted to running of a home business. The network that can be found on G7/20 has an interesting mix of programming. The channel will have a conservative format with respect to politics and will involve a lot of viewer participation. There is also a mix of arts programming that will be aired. The video and sound are very good from their location on G7/20.

Beginners Corner

And now, here are some common questions and answers from Gary Bourgois. The file Gary provided for us to publish was quite long so we had to break it into a couple of sections. Watch for more questions and answers from Gary Bourgois in the next issues of The Spec-Com Journal. At the end of this section, Gary leaves his Internet address so you can send him mail. If you are not on internet send your questions or comments to us at The SCj and we will forward them to him.

WHAT EQUIPMENT DO I NEED TO RECEIVE SATELLITE TV?

A TVRO (TeleVision Receive Only) System consists of the following components:

THE DISH

This is the most visible component, a parabolic reflector which may consist of Solid Aluminum, Perforated Aluminum or WIRE MESH. Dish sizes vary from small (3-4 feet KU BAND, EUROPE) all the way to 16-20 Ft (USA Commercial C-BAND) with the average falling between 7-12 ft, 10 ft being most common. This device focuses the microwave signals coming from the satellites much as the mirror in a reflecting telescope concentrates the light from distant galaxies.

THE MOUNT

The most common type of dish mount is called a POLAR MOUNT, so named because it is oriented to coincide with the earth's axis, enabling it to "track" the satellites, which are spread out in geostationary orbit in a band of the sky called the "Clarke Belt", named after Arthur C. Clarke, who dreamed up the concept of geostationary communications satellites back in 1945.

The mount is installed on a 3 inch pipe, which is sunk in concrete. Most (but not all) mounts require a 3.5" OD pole. In most (but not all) cases this is a 3" ID pipe. Schedule 40 works well, so does used "drill stem". In many areas, this is available from salvage dealers at very reasonable prices.

THE POSITIONER ARM (Actuator)

A device containing a motor that is used to swing the satellite dish to allow it to focus on individual satellites, which may be as close to one another as 2 degrees of arc. Actuator arms are most commonly found in 18- and 24-inch lengths (the longer the arm, the wider the arc that the dish can "see".) In addition, a more expensive aiming mechanism, called a "horizon -to-horizon" actuator, is capable of more pre-

cise aiming (important on Ku band and closely-spaced satellites), as well as being able to see the entire satellite arc from your location.

THE LNB

This is the little gizmo that amplifies the very weak signals from the dish, and also converts them to a more suitable band of frequencies. LNB means LOW NOISE BLOCK CONVERTOR. Older systems consisted of separate components: LNA (Low Noise Amplifier) and a down converter which changed the received signals (3-4 GHz, or GIGAherz A GIGAherz is one thousand megaHz....) to 70 Mhz.

The "standard block" used today is 950 to 1450 Mhz. Both C and KU band (while they input on vastly different frequencies) output on the 950 to 1450 Mhz block. HOWEVER there are special considerations when dealing with KU (explained later).

THE FEED ASSEMBLY

The feedhorn acts as a microwave "funnel" if you want to think of it that way. This device places the LNB at the focus of the dish, and is usually just called "the feed". There are several different types of feeds.

Single C band feed: Contains ONE C band LNB. A device called a POLAROTOR is located inside, which allows the reception of both vertically polarized and horizontally polarized channels. In general practice, the EVEN channels are on ONE polarity and the ODD channels are on the opposite polarity. The actual polarity scheme depends on the satellite in question.

Dual C band feed: Allows the use of Two C band LNB's one for horizontal polarization and one for vertical.

Dual Band Feed (C and KU): Has two separate LNB's, one for C band and one for KU band.

Dual C band and single KU band feed: (There is at least one version of this type of feed.)

The most popular Dual Band feedhorns are the Chaparral CO-ROTOR II Gardiner and ADL, though there are others on the market. While these are actually a compromise system, with some minor losses, in practice they work pretty well.

SATELLITE CABLES

This is a bundle of various wires and cables that run from the dish to the receiver, and consist of cables for the C and/or KU LNB's, Power to the LNB (Usually sent over the same COAXIAL CABLE) as well as power for the positioner arm, return signals for position readout, and control voltage for the polarotor.

Power to actuator Arm (two conductors)

Return position readout from actuator (two conductors) The position readout cable from the actuator to the actuator controller should have THREE conductors for the position sensor. For pot sensors, one is for the tap, the other two are for the resistor. For pulse sensors, one is ground, one is +5V, and the other is pulse input. Not all arms require all three connections, but my scrounged Saginaw special has some nifty hall-effect gizmo that does require power to generate pulses.

Power to polarotor (two conductors)

Polarotors come in two different varieties. The "old style" just used a 12V motor to rotate the probe. Apply power, it moves. Reverse polarity, it changes direction. The new ones use a three wire connection. One for +5V, one for ground, and one for "pulse".

RG-6U cable (rather than the often-seen RG-59U) is the cable of choice for the higher frequencies of satellite TV.

RECEIVER

There are many receivers available by a number of manufacturers, both new and used. The receiver takes the signal from the LNB and produces a TV picture from the wideband FM video, and also allows you to tune SUBCARRIER audio, which can provide many different audio only services such as MUSIC and TALK shows and even DATA TEXT reception. Newer receivers work with the standard 950-

1450 mhz block that comes out of a standard LNB. Older ones use a direct 70 MHz feed and have an LNA (low noise amplifier) and downconverter at the dish. If you are on a budget, one of these older type receivers might be a good place to start, though most folks today use the more modern technology.

Your receiver may also have a descrambler built in for decoding PAY services. This type of receiver is called an IRD or Integrated Receiver Descrambler. You need a descrambler for services like HBO and regular CABLE-TV type services (to be discussed later).

DESCRAMBLER

The DE-FACTO consumer descrambler is the VIDEOCIPHER system which is manufactured by General Instruments (G.I) in the USA. There are stand-alone decoders still available. However a major consideration is that at the present time, descrambler technology is changing and older descramblers will not work under the new standards. Beware when buying an IRD (INTEGRATED, RECEIVER DESCRAMBLER) that the unit can be upgraded to the new VC-II+ and forthcoming VC-II+ RS (Renewable Security) if you plan on watching scrambled (Mostly Cable) services or Pay Per View movies and sports events.

In Canada, the OAK-ORION system is another popular scrambling system, which is used by TELESAT CANADA on the ANIK (Canadian) satellites. These programs may NOT be subscribed to in the US legally. There ARE some USA programs transmitted with the OAK-ORION system, primarily horse racing and hospital programming. While it is LEGAL to own a OAK-ORION decoder, there are not enough services available in this format to warrant doing so. Unless a person is a REAL horse racing nut, and even then, getting the decoder AUTHORIZED to descramble the horse races is questionable. There are other scrambling systems in use in Europe.

In the USA, there has been a serious market for "pirate" or "chipped" decoders, which receive scrambled services without the payment of subscription fees. This situation has lead to the change to the revised VC-II+ and forthcoming VC-II+ RS systems, which hope to thwart this piracy through the use of a renewable "credit card" type of chip system. Of course, this technology costs the consumer additional money, on top of subscription fees that for

the most part are higher than comparable cable prices. Since the majority of the scrambled channels are owned by the cable TV conglomerates, who would prefer people subscribe to cable rather than view by satellite, the reasoning here is obvious. For this reason, satellite TV popularity in the USA has declined.

WHAT ARE DATS AND SEDATS AUDIO, AND HOW CAN I RECEIVE THEM.

DATS is Digital Audio Transmission System, and SEDATS is Spectrum Efficient Digital Audio Transmission System, which are replacing SPCP for many national services. All the Major networks, CBS, NBC, ABC, MUTUAL and quite a number of syndicators (Howard Stern, etc) are now on DATS and SEDATS. These signals are primarily on the Aurora (C5) Satellite. There is no home DATS or SEDATS receiver, and no known experimenter project for receiving this audio. We understand that the manufacturers of these receivers WILL sell them to anyone, including home dish owners, but the \$4000 price tag for a mono audio only receiver has thus far placed this technology out of reach for 99.9% of the audio experimenters we know.

WHAT DIGITAL INFORMATION IS AVAILABLE ON SATELLITE AND HOW DO I GET IT?

There are a number of different text information services available via satellite, some requiring no subscription fee, and others that are pay services.

WST = World System Teletext. This system is very popular in Europe and is also available in the USA. Teletext reception requires you add a teletext decoder, a device that costs less than \$300, and connects between your satellite receiver and TV set. The information is displayed as text on your TV screen, so no computer or other device is needed. Information includes News Stories, Sports Scores, Trivia and other features. The data is transmitted in the Vertical Blanking Interval of WTBS (Turner Broadcasting Service) G1/18. To receive the signal, you must be a subscriber to WTBS, so that you will have an unscrambled signal. The name of the text service is ELECTRA, and also features weather maps and other information displayed in text/graphics on your TV screen. WST Decoders are available from Astro Guard Industries, 340 A Rancheros Road, San Marcos CA 92069. They have also been seen for sale on SHOP AT HOME 1-800-366-4010.

X*PRESS X*CHANGE. By far the most comprehensive source of text news is X*PRESS. This service links you into all the major world NEWS WIRE services: AP, UPI, REUTERS, TASS and many others. To take advantage of this amazing service, you must have a computer just to sort the incoming data for you. X*PRESS allows you to select articles based upon key word search. You will also need an INFOCIPHER decoder. Computers supported include PC clones, Macintosh, ATARIST, APPLE II. A new PC software package was released in June of 1993 for MS/DOS machines which addresses problems of earlier versions. Full information on X*PRESS X*CHANGE service can be had by dialing 1-800-7PC-NEWS. The fee is reasonable considering the amount of data available. The total news junkie will love it. This service is transmitted on G5.

SKYLINK. This is also a service available for the home TVRO user, and offers downloads and some text information and TV schedules. Reception requires the purchase of a \$150 box, and payment of a yearly \$90 fee. The main appeal of this service is access to a HUGE array of public domain and shareware programs for MSDOS compatible computers. There are also weather maps and other services. The Shop-At-Home TV service operate SKYLINK, and market the box and the subscriptions. The data is fed on an audio subcarrier of their home shopping network service on G3/17. For more information on SKYLINK call 1-800-927-6468.

In addition to these services directed at the home user, there are digital signals all over the sky, but these are commercial services, using proprietary encoding systems, and are directed at commercial users, which are either too costly for the home user to subscribe to, or not available at any price. Experimenters occasionally manage to figure out ways to tap into these systems, but such discussions are beyond the scope of the column. If interested in such things, we recommend Tom Harrington's popular book: **THE HIDDEN SIGNALS ON SATELLITE TV**, even though much of the information in the book is a bit out of date.

There is a movement currently to put USENET on satellite as a free service for the TVRO community. The project needs help from people willing to assist in writing software, etc. If you are interested, there is a mailing list for the project. Do not subscribe out of idle curiosity, but only if

you wish to be involved in the project or have a deep interest and will not just read a few days and then want to cancel the list. USENET-SAT Listserv is set up for all interested parties.

To join send message to : listserv@sm2.mcg.edu in body of message put in SUBSCRIBE USENET-SAT you will get a confirming message back as soon as the listserv processes your message. Now to send mail to anyone on the list address message to USENET-SAT@SM2.MCG.EDU it will be broadcast to everybody on the list

ISNT IT DIFFICULT TO INSTALL A SATELLITE SYSTEM?

You and a couple of friends can assemble, install and track your satellite system in one day, even if you know NOTHING about the technology involved. You need only know how to dig a hole, pour concrete, and put a pipe into the concrete and get it plumb. There are many books on the topic of satellite TV that can help you, which should be available on loan from your library. Doing it yourself will save you around \$500. However, if you don't mind spending the additional money, your local dealer will be glad to set your system up so you can just sit back and push the buttons on the remote control. This is up to you. Some people do not like to tinker and tweak. A do it yourself system can take some time before you are satisfied with it.

I LIVE ON A WOODED LOT WITH LOTS OF TREES. IS THIS A PROBLEM?

Not if you have a chain saw. Trees in the way mean you don't get a picture, at least in the summer time. Trees have a tendency to block the microwave signals. If you are not sure of your situation, it is advisable to have a "SITE SURVEY" done by a local dealer. This should cost you no more than about \$25. Usually you can find SOME place to put the dish to see the satellites, and mounting on a pole or your roof may help the situation. I have a similar situation here, and my dish is 26 feet high, and includes a massive steel reinforced wooden structure complete with a service platform. This helped me clear the tree line enough to actually get FOUR international satellites. Obtaining permission from the city to build this structure was a bit of a hassle, but thanks to the material from ASTA, I was able to convince them that under the Federal Pre-emption the city could not deny the installation. I

now have perfect reception of the entire satellite arc.

I HAVE A QUESTION THAT WAS NOT ON THIS LIST. HOW DO I GET AN ANSWER?

Ask Away. The only dumb question is the one you don't ask. We don't mind helping you get started. Send me a note: flash@lopez.marquette.mi.us and I will try and answer, and include your question in future versions of this column.

SCPC Audio Channels

Single Channel Per Carrier (SCPC) on TVRO systems have a full range of audio programming including state and national networks, sports, music, religious programming, news feeds, business information, talk radio, reading for the sight impaired and much more.

SCPC should not be confused with subcarrier audio. The TVRO signal carries video information and audio subcarriers. Normally the audio for the video program is on 6.2 or 6.8 MHz subcarrier but there is room on the TVRO signal for other subcarriers that are used for other audio services. SCPC is a narrow band channel that has its own carrier.

A great new book by Thomas P. Harrington, titled 'Tune To Satellite Radio' covers in detail the different audio signals on the TVRO systems, what they are, how to receive them and what you will find. If you are interested in audio programming I strongly recommend the book. The book is published by and available from Universal Electronics, Inc. You can find ordering information in their advertisement in this issue of The Spec-Com Journal

You can receive the SCPC audio signals in a couple of ways, again we recommend Tune To Satellite Radio for full details on receiving this interesting programming.

Universal Electronics, Inc. has the SCPC-100 receiver which will receive all the programming with satisfactory results and is very easy to hook up. It has 50 memory channels. You simply connect the coax coming from your dish to the SCPC-100 and hook a short jumper to your IRD.

Universal Electronics, Inc. have the SCPC 300-c Commercial broadcast quality receiver. To connect this to your system you use a splitter that has a power pass on one port. The port that passes the power is

connected to your IRD and the other port is connected to the SCPC 300-C.

The other method for receiving the audio programming is to use a scanner that has UHF continuous coverage from 950 to 1450 MHz in the FM mode. The ICOM R-7100 and R-100 receivers work well as can the Radio Shack Pro. 2006.

Here again, you use a splitter that will pass power only on one port. The input from your dish is connected to the input of the splitter, the power pass port is connected to your IRD or satellite receiver. The other port is connected to your scanning receiver.

If your splitting the LNB output with one line going to your IRD and the other line to your scanner try searching on these Satellites between these frequencies:

PanAmSat-1(KU)/Horizontal: 1100.0 - 1280.0 MHz
 Satcom-F2(C)/Horizontal: 1160.0 - 1250.0 MHz
 Galaxy-2(C)/Horizontal: 150.0 - 170.0 MHz
 GE-K2(KU)/Vertical: 950.0 - 1000.0 MHz
 Spacenet-3(C)/Horizontal: 1120.0 - 1210.0 MHz
 Galaxy-4(C)/Horizontal: 150.0 - 180.0 MHz
 Galaxy-4(C)/Vertical: 155.0 - 160.0 MHz
 Anik-E2(C)/Horizontal: 197.0 - 260.0 MHz (also around 1140.0)
 Morelos-1(C)/Vertical: 135.0 - 160.0 MHz
 SBS-5(KU)/Horizontal: 1000.0 - 1025.0 MHz
 Gstar-2(KU)/Horizontal: 980.0 - 1020.0 MHz
 GStar-2(KU)/Vertical: 980.0 - 1005.0 MHz
 Satcom-C5(C)/Vertical: 160.0 - 220.0 MHz (also around 1030.0)

SATELLITE RADIO

The just released book "Satellite Radio" is the first complete, up to date book dealing with the non video (audio) services carried on many domestic C and Ku Band satellites. These interesting audio services can be received by most home satellite systems (TVRO) in very simple ways.

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"Satellite Radio" has the most novel form of enclosed satellite audio services guide of any book or service. The Satellite Radio Guide is not bound in the book itself, and this guide section is updated every three months. Each issue of "Satellite Radio" includes the latest Satellite Radio Guide Section.

Another feature of "Satellite Radio" is the yearly Satellite Radio Guide subscription option. A one year subscription is available at a nominal cost with the purchase of this book.

The book contains eight full chapters covering all audio services found on the domestic satellites that can be tuned with your home satellites system. Chapters cover services on the satellites, FMSquared Audio, all SCPC services, Regular Audio Subcarriers, Weather FAX, ATIS Systems, Satellite Radio Equipment, plus the full up to date Guide Section.

"Satellite Radio," with Guide, sells for \$16.95 plus \$3.00 shipping by Priority Mail and can be obtained from: Universal Electronics, Inc., Attn: Satellite Radio Guide, 4555 Groves Road, Suite 12, Columbus, Ohio 43232. Phone (614) 866-4605 FAX (614) 866-1201. Let them know you read about it in the pages of The Spec-Com Journal.

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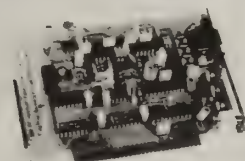
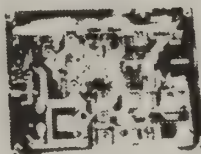
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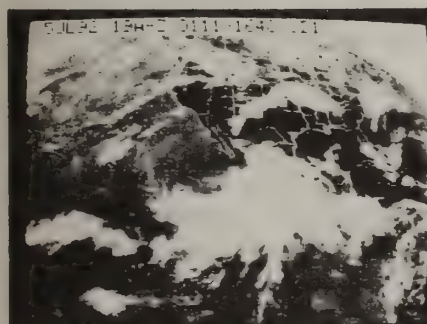
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SWAGURSAT A SATELLITE DEMODULATOR FOR THE ICOM R7000 or R7100 RECEIVER

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"ATV ACTIVITIES ON THE AIR" by John Jaminet, W3HMS.

So you have finally done it....."You're P5 in living color....so now what?"

Yes, it is true among hams, for the most part, that when technical problems are solved, we have nothing to do!

So, let's consider a new concept that will become more important with each passing year: each year new hams on the air with ATV will become "P5 full color" faster, thus....the more we need high interest activities. Now this concept can be delayed as we adopt and perfect new techniques like FM, microwave, intercity relays or of course, the three together. Perhaps we should pursue these activities for this reason alone although I like to pursue technical achievement for its own sake.

In 1989 at our first seminar, we looked at this topic for the first time, so what is new?

Well, I found that another ATV magazine in the world would not print my article along these same lines! Why, perhaps I found our Achilles heel and they did not want to advertise our weakness!

In brainstorming with Bill Robinson, W3ROQ, before the seminar, we seemed to arrive at an idea we didn't like, but we just knew there was too much truth in it to skate around the issue like a politician:

* The #1 Problem.....we bore each other to death!

OK, now don't get out your tar and feathers just yet. Listen to your net and/or

*** The #1 Problem
..... we bore each other to death!**

your on the air sessions with a critical but an impartial ear and make believe you were a ham contemplating ATV. What would you conclude? Perhaps some of the following:

1. ATV hams aren't very creative.....what **NEW** ideas do you **SEE** on your screens?

2. Now you know why new hams get on air.....see the same old stuff.....and sell their gear!

3. We ATVers need a solution.....we must be creative, be alive, and **DO** things.

* The challenge for you readers is this: I'll suggest 21 activities, then at the end you should try to add 3-4 others. I can't "check you out" but your conscience can....and it won't lie to you, HI!

1. Show each other your mugshot and your station.....**NO**..this is the old boring stuff so let's start again.

1. (The real 1) Hold a net once per week at the same time & same day. Have a creative NCS, put your audio on the local 2 meter repeater, have one key topic per night, e.g. it might be how a VCR works, how to dub new material onto a cassette, how to change the sound track, HD TV, FM TV, fax modems, etc.

2. Broadcast live ATV from a ham studio. Yes, the Belgium ATV hams near Liege broadcast each Saturday afternoon about 1500 for 2-3 hours. You could transmit license study classes both theory and CW, cover tech topics that need visuals, show ham community interest items like recent ATV meetings you have video taped and many more. So you're not going to be home...tape it just like you do with ball games and the "soaps"! Broadcasting in a way the FCC will not like? I don't think so as you will just naturally use sub-carrier sound so you can talk with your viewers on 2 meters.

3. Broadcast test patterns then endless loop tapes of ATV interest items on a regularly published schedule. No fancy gear...use a mechanical wheel with paper notes, talk your local cable outlet out of their old video bulletin board. Make ham announcements and cover public service ham related news.

4. Transmit VCR Cassettes of local events....tower raising, ATV events, portable ATV operations, abridged vacations slides/pix/video, etc.

5. Transmit VCR cassettes of tech topics like ATV, packet, show your equipment "brag tape" like RTTY.

6. Hold a regional cassette exchange among ATVers. The groups in the East could swap tapes among each other and with the Midwest ATVers, the West Coast folks could swap withwell you get the idea. Five to ten years ago, tapes were costly and VCRs more so....today, 2 VCRs in the ATV ham shack is not just for the rich, so it is possible to copy rather easily! Remember, you can mail cassettes **ONLY** for book rates. Example: Mechanicsburg to Cincinnati, OH is \$1.05.

7. VCR overseas cassette exchange.....we did this for our 25 Sep 1993 seminar and will do it again. This is a big technical challenge as you must often convert among NTSC, PAL and SECAM. It is perhaps a linguistic challenge at each end.

8. Play bingo on the air or on the Net. Naturally, you won't wager your hard earned money will you? And certainly you will not discuss it on the radio if you do!

9. Play Chess/checkers on TV.....send moves by audio and show the other folks your board. This is not new.....people did this even on CWs years ago.

10. Technical projects....show and tell...show schematics and show "what's in the box".

11. Vacation photos.....show some good ones....not 2 hours!

12. Go portable.....races, parades, shopping center demonstrations with new "wrinkles" (I don't have them but hope you do!)

13. Go mobile in your family chariot, parked and/or in motion, show ski lifts and skiing in winter, show sail boats in summer.

14. Go mobile in new ways.....go portable in boats, trains, hot air balloons, blimps, airplanes, ultra lights and others.

15. Put TV in models.....model planes, boats, build a model dirigible, but don't name it Hindenburg, HI!

16. Televisé the Radio club.....business yes if not boring...but for sure Tech sessions which of course you have or are you "adminning" your people to death or hitting them with technical "marshmallows"?

17. Movies.....short travelogues or good comedy. Stay clear of the X stuff and use the standard of "would I like my 10 year old to see it?"

18. Use an outside camera on your tower/mast/house.....good for seeing the countryside, traffic, neighborhood "action", etc.

19. Use NASA satellite video.....Tell people in advance that it will be on the repeater from, for example, 1800 to 2200 local then **DO IT!**

20. Show weather radar.....not a new idea....do it on schedule or on command.

21. Test pattern potpourri.....show a bunch of test patterns by many people. The problem: some ATVs have only one bad one.....a good way to get some more creative action for test patterns.

Some items that were suggested during our seminar discussion:

1. Monitor an HF SSTV channel and make retransmission on FSTV.

2. Cover emergency drills and transmit pictures to Emergency HQ.

SO, what can you do to get results:

*...but
don't
name it
Hindenburg*

1. Note we have a new concept. Recognize that you need two groups for each repeater, a tech group and a programming group. Use creative people and have no dual members. Remember, an ATV repeater is not just a FM repeater with pictures. It is a new dimension in video programming that requires new thoughts.

2. If you have a new repeater.....get the two groups in action before the repeater is on the air.

3. Recognize you need to provide regularly scheduled service to members.....and keep it so. Tell the Chief of Maintenance about the new concept and have the maintenance crews work outside the "on air window" just like the pros. You have the luxury of being able to set a good maintenance window **AND** an on the air window.

4. Recognize excellence with annual awards.

5. Give personal recognition and say thanks to people who do things. Note that some hams are apathetic and will only complain about "they".

6. Counsel people, private; , who impede genuine progress.

7. Rotate NCS duties to achieve maximum idea exchange and avoid "burnout" of NCSs.

OK, now take the test yourself and add some items. Better yet, power up your PC or your pen/pencil and share them with us all. In conclusion, remember your ABCs

A= act Alert.

B= Be alive and enthusiastic.

C= use Creativity

I'm on packet at @K3WKK or per the call book address since 1983.

73, John W3HMS

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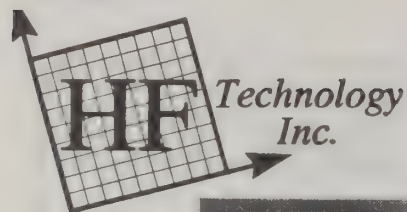
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IF70 Specifications:

IF Input Frequency: 70 MHz nominal
 IF Bandwidth: 16 MHz
 IF Sensitivity (3 dBQ): less than -85 dBm
 IF Sensitivity (20 dBQ): less than -72 dBm
 *Overall Sensitivity (3 dBQ): less than -95 dBm (P1 picture)
 *Overall Sensitivity (20 dBQ): less than -90 dBm
 *Overall Sensitivity (40 dBQ): less than -80 dBm (P5 picture)
 IF Input Dynamic Range: -85 to +5 dBm
 Video Bandwidth: 15 Hz to 4.2 MHz CCIR de-emphasis
 Video Output: 1 Vp-p into 75 Ω @ 4 MHz peak dev.
 Differential Gain Variation: less than 2 % p-p
 Differential Phase Variation: less than 1.5° p-p
 Subcarrier Detection Range: 4.5 to 8.0 MHz
 Audio Bandwidth: 15 Hz to 15 KHz +/- 3 dB
 75 μ s de-emphasis
 Audio Output: Line Level greater than 8 Ω

* Measurements made with RX1300 downconverter

All units are powered by 11 to 15 VDC. Enclosure dimensions are approximately Length: 6.5"

Width: 4.2"
 Height: 1.5"

Also available... complete line of 450 MHz FMATV equipment: TX450 FMTV transmitter @ \$199.00; RX450 AM/FM ATV downconverter @ \$149.00, for use with the IF70 for high performance FM system or for AM applications. Also available shortly, a complete line of

FMATV equipment for the 13 cm band. Custom versions of the above equipment can be manufactured to order. For information or to place orders phone: 708 639-4336 note new address and phone number ! VISA and MC accepted. To order by mail or for additional information write to HFT Inc. 457 Santa Fe Tr. Cary, Illinois 60013. Please add \$8.50 for shipping and handling, Illinois residents add sales tax. Some specifications are subject to change without prior notice.

TX1300 Specifications:

Frequency of Operation: 3 PLL synthesized user selectable channels 1240-1300 MHz
 Emission Type: FM, NTSC video with subcarrier audio channel adjustable 4.5-8.0 MHz
 Deviation Video: +/- 4 to +/- 11 MHz adjustable, nominally set to +/- 4 MHz
 Deviation Audio: +/- 25 KHz adjustable
 Video Bandwidth: 15 Hz to 8 MHz
 CCIR pre-emphasis (maximum video response dependent upon the choice of sound subcarrier frequency)
 Audio Bandwidth: 15 Hz to 15 KHz +/- 3 dB
 75 μ s pre-emphasis
 RF Output Power: 1 Watt nominal into 50 Ω

RX1300 Specifications:

Frequency of Operation: Continuously varactor tuned channels 1240-1300 MHz
 Emission Type: FM or AM, linear downconversion use IF70 for FM IF/detector use TV chan 3-4 for AM IF/detector
 IF Frequency Range: 70 MHz (FM operation) TV channel 3 or 4 (AM operation)
 Noise Figure: less than 2.5 dB
 Unconditionally stable, no tuning required
 Input Compression (1dB): -20dBm
 Conversion Gain: greater than 20dB

Fast & Slow Scan Happenings

What's going on in the world of Fast & Slow Scan Television? This section will keep you informed of the events that effect our hobby. If you have a project, event, product or information to share with the readers send it to The Spec-Com Journal. We will include it in future issues.

I start this writing a bit red faced. Our good friend and fast scan supporter, John Jaminet, W3HMS of Mechanicsburg, PA has been supplying us with timely and important information about the Central Atlantic Amateur Television Society as well as other activity related to the mode.

I have been remiss in not including this information in previous issues because of our production problems the last couple of issues. I sincerely apologize to John and all the people involved with the activity. The promotion you are doing is not only interesting but important for the growth and enjoyment of the hobby. I support the work you are doing and want to support you in any way I can. Please accept my apology and enjoy the reports John has prepared.

I think groups and individuals all over will have interest and may learn from the efforts this group is putting toward the improvement of the mode.

CAATN

Central Atlantic Amateur Television (ATV) Network, by John Jaminet, W3HMS of Mechanicsburg, PA.

CAATN First Meeting

The initial full meeting of this newly formed society was held on Sunday 7 March 1993 from 1000 to 1630 at Poor Jimmy's Restaurant, 2360 Polaski Highway (Route 40), Northeast, Maryland about 12 miles south of Elkton. Approximately 34 ATVers/enthusiasts attended from the states of Delaware, Maryland, New York, New Jersey, Pennsylvania, and Virginia.

The members selected the name "Central Atlantic Amateur Television (ATV) Net-

work" for the new group as interlinking among the principal cities represented by the group is one of the principal goals of the group.

The objectives were defined at the planning meeting on 8 November 1992 as:

1. Promote the exchange of the latest ATV information among the members.
2. Promote the establishment of video networking between these geographic areas.

The group will have approximately four meetings per year in March, June, September and November of 1993 at a centrally located site, often at Poor Jimmy's Restaurant on Highway 40 near Elkton, MD. The group enjoyed a superb breakfast and dinner!

The following officers were selected: Ron Cohen, K3ZKO of Philadelphia, Captain Video Emeritus, was elected as Chairman and John Jaminet, W3HMS of Mechanicsburg, PA was selected as Vice-Chairman. The Business Manager is Paul Seman, W3CSU and the Newsletter Editor is Henry C. Ward, N3GCE.

Regional coordinators were reconfirmed/named as follows:

Philadelphia, PA: Ron Cohen, K3ZKO and Russ Barber, N3HPX

York, PA: John Shaffer, W3SST and Dick Goodman, WA3USG

Baltimore, MD: Bob Bennett, W3WCQ

Wilmington, DE: Dave Stepnowski, KC3AM and Andy Alvarez, N3CUJ

Richmond, VA: Charles Bishop, AC4QG

Doylestown, PA: Dave Waustsen, N3LHY

Red Bank, NJ: Ken Barber, W2DTC

Several presentations were made and virtually all included many questions and

animated comments:

a. City repeater reports, e.g. "what is going on in ____" were made for the 11 major regions represented by group members.

b. Lightning Protection for the ATV tower and shack was presented by Ron Cohen, K3ZKO.

c. FMTV on 10 Ghz was addressed by John Jaminet, W3HMS.

d. Printed circuit boards were covered by Russ Barber, N3PHX.

e. The "Baltimore ATV Repeater" history was addressed with slides and comments by Bob Bennet, W3WCQ.

f. A review of technical possibilities of for the Central Atlantic Amateur Television (ATV) Network was presented by Dick Goodman, WA3USG.

g. An ad hoc technical discussion of ATV topics was chaired by Ron Cohen, K3ZKO. Several new sources for unique gear were identified. A Repeater Interlinking/Standards Committee was formed under the Chairmanship of Dick Goodman, WA3USG. The members are Bob Bennet, W3WCQ, Russ Barber, N3PX, Ron Cohen, N3ZKO and Dave Stepnowski, KC3AM. The Committee will meet on 4 April and will present its report to the next group meeting on 13 June 1993.

CAATN Second Meeting

The second full meeting of this newly formed society was held on Sunday 13 June 1993 at Poor Jimmy's Restaurant, 2360 Polaski Highway (Route 40), Northeast, Maryland about 12 miles south of Elkton.

We had a good crowd, for summer, of 23 highly-charged ATVers/enthusiasts from Delaware, Maryland, New York, New Jersey, Pennsylvania, and Virginia.

There was much "show and tell" and I, for one, was quite happy to see the enthusiasm

with which people demonstrated and discussed their gear. Unlike so many groups, we had about 1 per cent of our time in business matters and 99% in technical topics. To me, it was refreshing to reinvigorate the motivation for the pursuit of ATV. I think we have synergism at work here and I look forward to more and more good technical topics.

The Baltimore contingent, led by Bob Bennett, W3WCQ, was in charge of the program arrangements. Bob was unable to attend so Heru Walmsley, W3WVW took charge:

a. Heru, W3WVW discussed a 10 Ghz spectrum analyzer, demonstrated 10 Ghz FM TV with Gunnplexors and gave us ideas for using wave guides.

b. Ron, K3ZKO presided over activity reports from the several cities/areas in the CAATN, i.e. Philadelphia and York in PA, Baltimore, MD, Wilmington, DE, Virginia, and New Jersey.

c. Dick Goodman, WA3USG, presented the results of using an interesting PC program which produces digitized terrain maps with propagation paths showing clearly if a path between two stations is usable. In mountainous PA, this is vital!

d. Paul Seman, W3CSU, discussed electrical safety which a neat new twist. He used an ohm meter to measure the dry and wet resistance between the hands of all present. Then he gave each person a paper on which he portrayed what would happen to them if they got across a power circuit. I liked this briefing...it certainly will make us all just a bit more safety conscious!

e. Fred Merker, K3TAZ showed us a video tape and discussed his experiences with using ATV in an ultralight airplane. His video and commentary gave us all a good sense of what ultralight flying is all about. His shots showing the mounted equipment confirmed again the notion that "a picture is worth 10,000 words".

f. Fred Merker, K3TAZ, briefed us on high definition TV tests he had seen in recent months. He gave an overview of how it will work. The impacts on ham TV were discussed, no clear conclusions were reached.

g. Russ Barber, N3HPX, showed us visually the effects of signal attenuation and augmentation as may be caused by preamps and transmission lines in terms of P Ratings versus the microvolt level. Very

impressive demonstration of what is possible in terms of levels and what can go wrong.

h. A Repeater Interlinking/Standards Committee report was made by the Chairman, Dick Goodman, WA3USG. The members are Bob Bennet, W3WQC, Russ Barber, N3PX, Ron Cohen, N3ZKO and Dave Stepnowski, KC3AM. An open technical discussion once again focused on just what are the objectives of intercity linking, who has the control, how is it exercised, what bands, how many cities on at the same time, etc. Many stated that the committee needs to define the standards quite clearly in a "strawman standard for intercity linking" for review/debate at future meetings.

Our CAATN group will have approximately four meetings per year in March, June, September and November of 1993 at a centrally located site, often at Poor Jimmy's Restaurant on Highway 40 near Elkton, MD. The group again enjoyed a superb breakfast and dinner.....thanks, Poor Jimmy's. The CAATN officers are: Ron Cohen, K3ZKO of Philadelphia, Captain Video Emeritus, Chairman and John Jaminet, W3HMS of Mechanicsburg, PA is Vice-Chairman. The Business Manager is Paul Seman, W3CSU and the Newsletter Editor is Henry C. Ward, N3GCE.

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Richmond, VA: Charles Bishop, AC4QG
Doylestown, PA: Dave Waustsen, N3LHY
Red Bank, NJ: Ken Barber, W2DTC

Keystone VHF Club ATV Seminar

The 5th Annual Keystone VHF Club ATV Seminar was held on Saturday night 25 September 1993. In attendance were 34 ATVers/spouses/interested parties for an evening devoted to ATV. We were pleased to note that several people had attended all five sessions. The proceedings were chaired by John Jaminet, W3HMS.

For the first time, were pleased to welcome an audience of ATVers in Western Europe specifically in Switzerland, France, Belgium and also in Canada. This tape will be the "other side of the contract" and specifically our repayment to Michel Vonlanthen,

HB9AFO near Lausanne, Switzerland who provided us with a specially prepared tape for our meeting.

Our "Official Video" was made by Bob Storm, WB3EAF and the "Official European version" by Dick Goodman, WA3USG. We were particularly appreciative of the efforts made for the PAL to NTSC conversion by Russ Barber, N3HPX of Philadelphia and to Don Miller, W9NTP, for his video tape on FMTV.

We noted a special note from Mike Donovan, KA0JAW about the SPEC-COM publication schedule and routed same among all those present.

The business session was conducted by our Chairman, Ron Cohen, K3ZKO, Captain Video Emeritus.

Next we had reports of area "ATV Happenings" for York, Baltimore, Philadelphia, Dover, and other by Area Reps.

Then John Shaffer, W3SST lead the discussion of "Nostalgia and Progress in ATV" and he tapped the non-volatile memories of the ATV old timers present.

The York X-band 33 cm out and 70 cm in ATV repeater was discussed by Dick Goodman, WA3USG. Dick advised that a new output on 426.25 Mhz would be installed soon using just one antenna, with a duplexer, for reception and transmission. The filter was calculated to give 100 db attenuation between input and output!!! (More about this if it passes "field tests")

Then we watched Russ Barber, N3HPX, demonstrating a 70 cm ATV repeater via a previously made video tape along with a live discussion with the group.

Next, we watched the video tape of activity in Western Switzerland and France made expressly for CAATN by Michel, HB9AFO as arranged and presented by John, W3HMS. This was quite an "eye opener" with the gorgeous scenery and huge mountains of Switzerland but it also showed us that, like it or not, the stations in Europe are several years ahead of US ATVers with their use of microwaves and FM-TV. This same theme was noted in the following tape of FM-TV prepared by Don Miller, W9NTP, of Waldron, Indiana and hosted for us by John Shaffer, W3SST

The next briefing was entitled "ATV on air activities..what to do?" and was given by John, W3HMS. It has been prepared as an article and will be published in SPEC-COM for the month of December 1993.

November CAATN meeting

Report of the CAATN Meeting of 28 November 1993 by John Jaminet, W3HMS of Mechanicsburg, PA.

The most recent meeting of the Central Atlantic Amateur Television Network (CAATN) was held Sunday 28 Nov 1993 at Poor Jimmy's Restaurant in Northeast, MD. The session was conducted by our Chairman, Ron Cohen, K3ZKO, Captain Video Emeritus, of Philadelphia. The proceedings were taped by Bob Storm, WB3EAF for CAATN use and by John Jaminet, W3HMS for overseas ATVers following the approach started at York in September 1993.

Russ Barber, N3HPX, of Philadelphia demonstrated and discussed a 23 cm loop Yagi which he has built and will be selling in small quantities.

We had reports of area "ATV Happenings" for York, Baltimore, Philadelphia, Dover, and other by Area Reps.

John Shaffer, W3SST informed the group about the dual/in band repeater in York PA with input on 439.25 Mhz and outputs on 426.25 Mhz and 923.25 Mhz. Bob Bennett, W3WCQ, briefed the group on the activities of the Baltimore repeater group. Dave Stepknowski, KC3AM, briefed all on the Wilmington, DE repeater and he showed how he had packaged repeater components in a surplus cable TV line amplifier waterproof case.

Ron and Russ briefed all on the happenings in Philadelphia.

Andy Alvarez, N3CUJ, of Wilmington, DE showed the group a very small camera unit he had built up using the tiny B and W camera built for model trains.

Russ Barber, N3HPX, of Philadelphia discussed the importance of shielding repeaters and observed cases in which leakage of RF occurred around LEDs and feed-through capacitors.

Bob Storm, WB3EAF of the York group showed and discussed a video interface he is building for the York repeater which will permit selection and touch tone control of two VCRs et al by users who will be able to select upcoming activities on one VCR and general ATV interest video tapes on the second VCR.

The principal topic in importance and dedicated time was the discussion of how

to interlink our principal repeaters of the CAATN. Bob Storm, WB3EAF informed the group of the current manual control linking scheme in place now between York and Baltimore in which his station receives the Baltimore ATV repeater on 911 Mhz and transmits to York on 439.25 Mhz permitting the signal to be radiated by the York ATV repeater on 923.25 Mhz and 426.25 Mhz. For the reverse path, he inputs to Baltimore on 70 cm and they see it on their 70 cm and 33 cm outputs. There was considerable discussion on AM versus FM and when/where to use FM. The group generally considered that we wanted to perfect the York/Baltimore manual link as Phase One.

As such, it will be reported in depth at the March 1994 meeting by Bob Storm, WB3EAF and Baltimore test participants. The group will then define the other phases of the plan. Dues for 1994 were defined at \$5.00 and Paul Seman, W3CSU was selected as Treasurer for 1994. John Shaffer, W3SST will serve as Newsletter Editor, Interim. The Baltimore group will be responsible for the March 1994 meeting. The 1994 meetings of the CAATN are targeted for the following Sundays: 6 March, 10 July and 27 November at Poor Jimmy's in Northeast, MD and Saturday, 24 Sep 1994 in York, PA. If you have questions, please contact Ron Cohen, Chairman, K3ZKO of Philadelphia or John Jaminet, Vice-Chairman, W3HMS (@K3WKK packet) of Mechanicsburg, PA.

Thunder Bay ATV net starts

James French, KD4DLA of the Tampa Bay Area Amateur Radio Association provides us with their update of activity in Florida.

On October 26, 1993, at 8:00 pm, I started a monthly net called The Tampa Bay Area Armature Television Net on the KC4HAZ repeater system which has links on 146.940, 223.980, 442.275, and 51.720 Mhz. The net will be held on the last Tuesday of each month at 8:00 pm until further notice.

In so doing, I hope to spark more interest in the usage of Amateur Television (both fast and slow scan) in the Tampa Bay region. I hope the purpose of the net expands beyond using it for just coordination of transmitting and receiving to go as far as having a core group that is technically inclined and willing to help out with advice and/or technical knowledge of the different modes available. I would like to see ATV put to more use in the public service area,

i.e. parades, walks, and more!

Back in October, Hillsborough County Amateur Radio (HCAR) Amateur Radio Emergency Services/Radio Amateur Civil Emergency Service (ARES / RACES) was asked to help out with the county's mass casualty drill on October 20. We had 50 amateurs that responded to the exercise. We also tried to get fast scan tv going to as an added test of what we were capable of supplying in the way of services. We had a transmitter capable of 1/4 watt output power to a j-pole at about 30 feet. Due to transmitter problems, we only had marginal success with it, but it was enough to catch the interest of the county emergency operations director and have him ask us to price equipment for them. Hopefully we will have equipment in the emergency operations center in the next few months.

With help from amateurs like Bill Doan KD4HVE, John Garner KC4ZVO, Larry KD4SNL, and organizations like Thunder Bay Amateur Radio Association (In Largo, FL.), HCAR ARES/RACES, and Pinellas County ARES, The Museum of Science and Industry (M.O.S.I), we might just get amateur television rooted into the Tampa Bay area. Till next time I write.

LISATS Update

The Launch Information Service & Amateur Television System, Inc of Cocoa Beach Florida meets Wednesday @ 1945E on the K4GCC 146.34/94 repeater with video in 434.0 Mhz/Out 421.25 Mhz on the K4ATV/R ATV repeater. Simplex ATV Coordination is on 144.34 Simplex.

The LISATS Technical Committee thanks everyone for their patience. Work is being done on the controller to bypass and isolate its video circuits from 421.25 Mhz RF, and to install double shielded cables where required. Every resource available, human or material, will be brought to bear on increasing receive sensitivity and elimination the in-band interference!!

ATVQ award program

The publishers of ATVQ magazine have announced The Amateur TeleVision Quest award program and the formation of The ATVQ Society.

Any ham or SWL may join the ATVQ society. Each member receives a full color certificate of membership with a personal Quest ID number, which is used in the exchange of video contacts with other ATVQ

members. SWL will be issued the same certificate as Ham members but will have a Q call assigned in place of their ham call letters.

Upon reaching each plateau, an ATV station may apply for the appropriate award. A log should be submitted to ATVQ magazine with the call, name, address and Q number of the applicant. The name, call and Q number of each contact with date, time and band on which the contact was made. Enclose \$3.00 per certificate to cover the cost of printing and postage.

The rules are designed to loosely follow the SWOT and SMIRK VHF programs in operation. Tom W9NBG of Des Plaines provided an outline and drawing which have inspired the Q awards. The program is sponsored by ATVQ Magazine, but the participants do not have to be subscribers. For more information contact Henry Ruh of ATVQ at 540 Oakton Street, Des Plaines, IL 60018-1950.

ATVs use Medium Scan Mode

ATVs use medium scan teleconference techniques between Harrisburg PA Campus of Penn State University and the main campus in State College, PA by John Jaminet, W3HMS.

On 9 Feb 1993, Dick Goodman, WA3USG, John Shaffer, W3SST, and John Jaminet, W3HMS conducted a two-way teleconference with members of the Nittany Lions Amateur Radio Club of State College, PA via a two-way interactive medium scan television link. The distance between State College and Harrisburg is about 125 miles. The purpose of the teleconference was to promote ATV and we discussed various aspects of ATV for about 2 1/2 hours. The facilities are owned by the College and were used off-hours by the Nittany Lion Ham Club. The video is digital 384 kb medium scan signal sent in duplex mode by T1 lines, i.e. approximately 1.5 MBPS. The image quality was excellent but the images became blurred with motion. For example, if an animated speaker moved his hands too fast, you would see the hand before and after the motion but only as a blur during the motion. This is an excellent medium to use for long-distance promotion of ATV if you have the facilities available.

SSTV from Sound Blaster

Harlan Technologies of Rockford, IL (see their ad in this issue of The SCj) has

introduced an revolutionary product for the Slow Scan enthusiast. Now, by using your Sound Blaster compatible card and this new software you can copy 8, 12, 24, 36 sec B&W, 36 & 72 sec. Color (in B&W), Scotty 1 & 2 (in B&W) on your computer.

The requirements are PC, VGA 640X480-256 colors, and Sound Blaster Compatible card. This is a very low cost and effective way to join the fun of receiving Slow Scan TV.

With the new Slow Scan II software for Sound Blaster you can send and receive Slow Scan TV (see Harlan Technologies ad in this issue of The SCj for details and requirements for the program).

Harlan Technologies also has introduced a Slow Scan Television and Audio Analyzer for the Sound Blaster. Now you can use your sound blaster to see the signals that your hear and analyze them. (see the article by Gene Harland in this issue of The SCj).

New product for SSTV

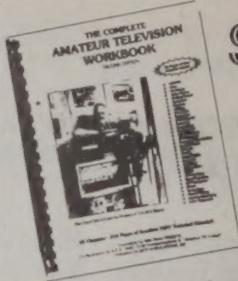
John Langner, WB2OSZ of Absolute Value Systems in Chelmsford, MA have released a new and exciting product for the SSTV market.

For those who do not yet have an amateur license, or anyone who just wants to receive color images... Absolute Value Systems is proud to announce their newest product - the low cost SSTV Explorer!

The SSTV Explorer receives all the popular modes with the exception of the AVT modes. It plugs in to your computer's serial port. It comes with the same easy to use graphical user interface software as the popular Pasokon TV unit.

Requirements: IBM-PC/AT compatible (286 or higher) with 640K RAM, VGA display adapter and color monitor. A mouse is highly recommended but not absolutely required for operation. Slow scan audio is input via a simple connection to the head-phone or "line out" jack of your HF SSB receiver or amateur radio transceiver.

the SSTV Explorer is reviewed in The "Digital Framstore" column by Fred Sharp. For more information contact Absolute Value Systems at (508) 256-6907.



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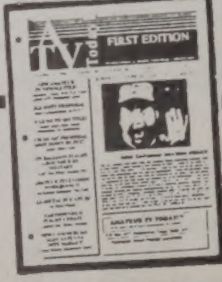
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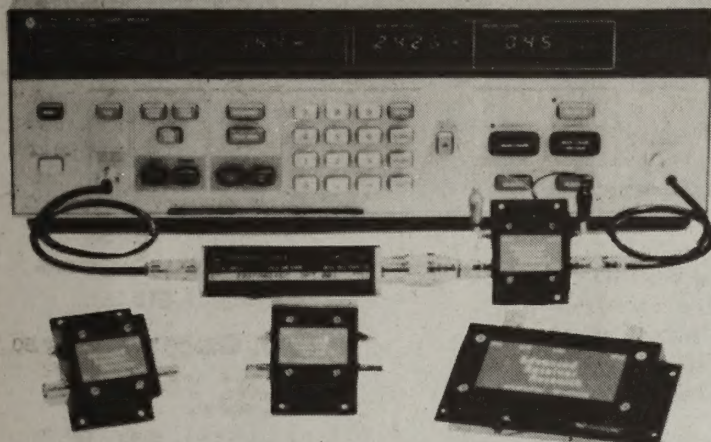
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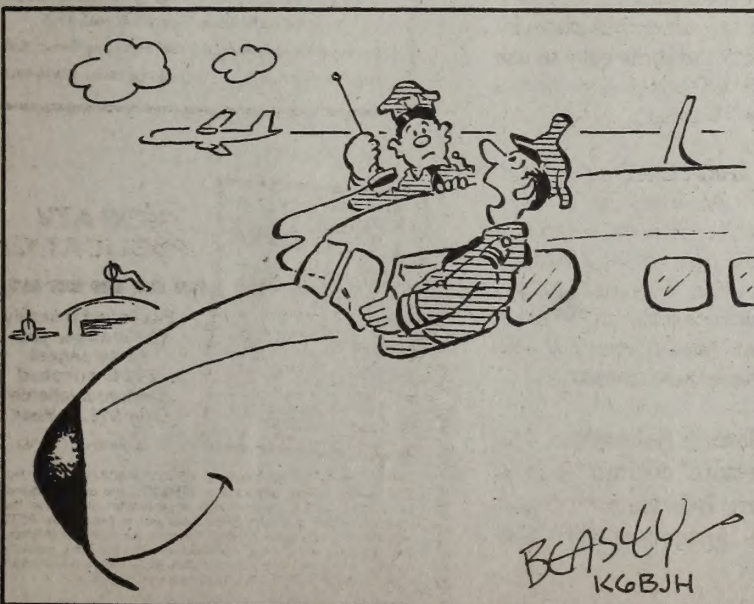
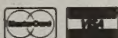


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P50VD	50-54	<1.3	15	0	DGFET	\$29.95
P50VDG	50-54	<0.5	24	+12	GaAsFET	\$79.95
P144VD	144-148	<1.5	15	0	DGFET	\$29.95
P144VDA	144-148	<1.0	15	0	DGFET	\$37.95
P144VDG	144-148	<0.5	24	+12	GaAsFET	\$79.95
P220VD	220-225	<1.8	15	0	DGFET	\$29.95
P220VDA	220-225	<1.2	15	0	DGFET	\$37.95
P220VDG	220-225	<0.5	20	+12	GaAsFET	\$79.95
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P432VDA	420-450	<1.1	17	-20	Bipolar	\$49.95
P432VDG	420-450	<0.5	16	+12	GaAsFET	\$79.95
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SP50VD	50-54	<1.4	15	0	DGFET	\$59.95
SP50VDG	50-54	<0.55	24	+12	GaAsFET	\$109.95
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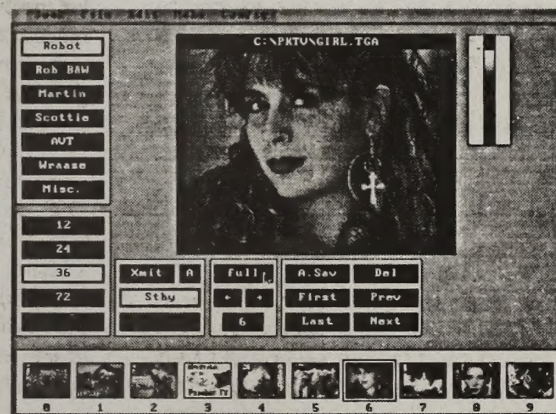
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Pasokon TV

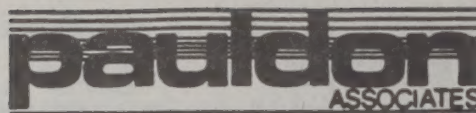
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 Audio Input Impedance: 600 Ohm

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